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An Address
ON
LEPROSY,
WITH AN ACCOUNT OF A CASE,

Delivered before the Section of Medicine in the Royal Academy of Medicine in Ireland on May 21st, 1915,

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THE LITERATURE OF LEPROSY.

MR. PRESIDENT AND GENTLEMEN,—In the struggle between man and disease from the dawn of regular history to the present there is no malady which has quickened popular sentiment, taxed human endurance, or aroused universal sympathy to the extent that leprosy has done. In the whole domain of medicine, through every stage of its evolution, there is no single disease which has engaged so many master-minds of every nationality—poet, painter, physician, and divine. Yet the Bible, which is the beginning of wisdom as well as of truth and the foundation of most of the knowledge we possess, has added very little, if anything, of scientific value to the literature of leprosy. It reminds us how our Lord, the greatest physician of all times, being moved to pity at the sight of the lepers, performed one of his greatest miracles on their behalf. Leprosy, once the most generally diffused, and still perhaps the most surely fatal of all maladies, was first observed in Egypt 1500 B.C. It raged in Italy during the time of Pompey, and subsequently extended from the Equator to the Poles. It was amidst the stir and movement of the Crusades that leprosy became epidemic in western Europe. From the end of the eleventh century for a period of 200 years whole tribes, wandering to and from the East, were exposed to privation and want consequent on unceasing warfare, while many who were not actually so engaged were deprived of the necessaries of life, their lands laid waste by the armies of the Crusaders, and in many instances remaining untilled for want of labourers. Thus, with repeated wars, the imperfect state of agriculture in Europe subjected the inhabitants to constant scarcity of food, want of cleanliness, mendicant misery, the too constant attendants of scurvy, scabies, and psoriasis, with which leprosy was erroneously classed.

No recent or even modern writer has described the symptoms of what we now call leprosy with greater precision than some of the Greek writers. Hippocrates seemed to have known it only by hearsay, and probably confused it with psoriasis; while Aristotle described it more fully. Aretæus in the first century described the same malady under the name elephantiasis, because of some supposed resemblance of the diseased skin to that of the elephant, "for it is disgusting to the sight," says Aretæus, "and in all respects terrible, like the beast of similar name."

The description of leprosy by Aretæus in those far-off days corresponds so completely with the symptoms we now know in more modern times that I am induced to give it in detail, thus: "Shining tubercles of different size, dusky red or livid in colour, on face, ears, and extremities, together with a thickened and rugous state of the skin, a diminution or total loss of its sensibility, and a falling off of all the hair except that of the scalp. The disease is described as very slow in its progress, sometimes continuing for several years without materially altering the functions of the patient. During this continuance great deformity is generally produced. The alæ of the nose become swollen, the nostrils dilate, the lips are tumid, the external ears, especially the lobes, are enlarged and thickened and beset with tubercles, the skin of the cheek and forehead grows thick and tumid and forms large and prominent rugæ, especially over the eyes; the hair of the eyebrows, beard, pubes, and axillæ falls off, the voice becomes hoarse and obscure, and the sensibility of the parts affected is obtuse or totally abolished, so that pinching or puncturing gives no uneasiness. This disfiguration of the countenance suggested the idea of the features of a satyr, or a wild beast; hence the disease was by some called satyriasis, or by others leontiasis. As the malady proceeds the tubercles crack and ultimately ulcerate. Ulcerations also appear in the throat and nose, which sometimes destroy the palate and septum, the nose falls, and the breath is intolerably offensive, the fingers and toes gangrene and separate joint after joint." Aretæus and the ancients believed elephantiasis to be a universal cancer of the body, and spoke of it with terror. Aretæus prefixed to his description of the disease an account of the elephant in order, it is presumed, to point out the analogy between the formidable power of the beast and of the disease.

Guy de Chauliac, the celebrated surgeon of the fourteenth century, gives the following six symptoms as the most trustworthy of the malady: "Rotundity of the ears and eyes, thickening and tuberosity of the eyebrows, with falling off of the hair, dilatation and disfiguration of the nostrils externally, with stricture of them within, and fœtidity of the lips, fœtidity of the breath and of the whole person."

John of Gaddesden says no one should be adjudged a leper and separated from mankind until the figure and form of the face are actually changed.

Glanville, another English author who wrote in the fourteenth century, remarks that "leprous persons have redde pymples in the face out of whom oftene runne blood and matter; in such the noses swellen, the virtue of smelling faileth, and the breathe stynkyth right fowle, the voys is horse, the infectyd are unclene."

A good representation of leprosy in the Middle Ages is to be seen in a picture at Munich, by Holbein, painted at Augsburg early in the sixteenth century. St. Elizabeth is depicted as giving bread and wine to a group of lepers, including a man whose bearded face is covered with large, round, reddish knobs; an old woman whose arm is covered with brown blotches, the leg swathed in bandages through which matter oozes, the bare knee also marked with discoloured spots, and on the head a white cloth or plaster; and thirdly, a young man whose neck and face (especially round the somewhat hairless eyebrows) are spotted with brown patches of various sizes. It will thus be seen that almost from its very inception the symptoms of leprosy were not only well understood but clearly defined both by pen and brush.

THE CONTAGIOUSNESS OF LEPROSY.

That leprosy was believed to be contagious may be inferred from the efforts made by the ancients to seclude the diseased and prevent their communication with the healthy. Lepers were enforced by law and popular sentiment to wear a special costume, usually a long grey gown with hood drawn over the face, and to carry a wooden clapper to give warning of their approach, and to only indicate with a stick the articles they desired to buy in a market; they were forbidden to enter inns, churches, mills, or bakehouses, to touch healthy persons or eat with them, to wash in the streams, or to walk in narrow footpaths. For the segregation of lepers leper-houses existed in France in the seventh century, in Germany in the eighth, and in England in the eleventh century. Canonical laws were made in England preventing lepers from marrying. We have it on the authority of one of the most brilliant writers in connexion with English mediæval history—the Benedictine monk Mathew Paris—that there were 19,000 leper houses in Christendom in the thirteenth century, and that an order of knighthood dedicated to St. Lazarus was instituted, the members of which had the care of lepers and the control of leper houses. The number in France is independently estimated at 2000, while according to the late Sir James Simpson there were in England 95 religious hospitals for lepers, besides innumerable smaller pest houses, in addition to several in Ireland and Scotland. It is interesting to note there were no new leper hospitals built in England after the fifteenth century, towards the end of which time scarcely a trace of tuberculated leprosy could be found in any of the more civilised parts of Europe. The disease has, however, persisted in a few isolated spots, especially in the west coast of Norway, about Bergen, Iceland, and in some parts of Spain. In 1890 there were in Norway 1100 lepers; in 1906 there were only 500. According to Dr. George Pernet's latest statistics there are about 40 lepers at present in the United Kingdom. It was not until the researches of Danielssen and Boeick, of Norway, who in 1842 began the study of the disease in their own country and elsewhere under the name of Spedalskhed, together with the coöperation of Hebra in 1852 and Virchow in 1859, that a serious endeavour was made to differentiate leprosy from a whole series of very different cutaneous affections with which it had been for centuries confounded. The influence which bacteriology was beginning about this time to exercise on clinical medicine received an additional fillip in the discovery of the lepra bacillus by Hansen in 1880. From this time onward the cause and communicability of leprosy became a scientific fact; the only missing link in Hansen's chain of evidence—and the link is still absent—is the inability to transmit with certainty, by inoculation or otherwise, the cultivated bacillus to animal or man. All attempts to transmit leprosy to man by inoculation have hitherto failed, with one exception, which is open to question. A Sandwich Island criminal named Keanu, apparently at the time free from leprosy, and whose sentence of death was commuted on the condition that he should submit to inoculation, was inoculated by Arning from a lepra nodule in 1884. Within six weeks he developed symptoms of leprosy. In about two years later he was a pronounced leper, and in six years from the date of inoculation he died from leprosy. The subject of the experiment was a native of a country in which leprosy was endemic, and members of his family had had leprosy. The short period of incubation and the previous communication with lepers discount the evidence of inoculation in this case.

Obscurity of the Mode of Infection.

It must be allowed that in our present knowledge of leprosy the mode of infection is obscure, whether by food, water, air, man or beast, by the broken or unbroken skin, are questions respecting all of which much diversity of opinion still exists, and whether the infecting germ enters the body as a spore or a bacillus for the present lacks confirmation. That infection does take place is no longer open to controversy, and that the infection comes from another leper is equally well established, for as leprosy is a germ disease it cannot originate *de novo*; it must come from a pre-existing germ whose habitat is probably man, because so far its presence has only been demonstrated in human tissues. Thus the general statement may be made that neither climate, race, soil, nor food can by any possibility originate leprosy, but that in countries where it is already endemic it may be perpetuated by any one or all of these.

The hereditary nature of leprosy, once so universally accepted, has but few supporters to-day. Virchow and Kaposi were amongst the first to point out this fallacy by proving that the most the supporters of heredity could possibly claim would be an individual susceptibility. Manson disposes of the question of heredity in the following terse but forcible sentence: "Physiological peculiarities may be inherited but parasites never."

That leprosy is propagated by contagion and by contagion only is now almost universally accepted; the following case, in proof thereof, pre-eminently stands out. In 1872 Dr. (now Sir) Hawtrey Benson exhibited before the Medical Society of the Royal College of Physicians of Ireland[1] a man who had contracted leprosy in the West Indies, where he had lived for 22 years. After remaining a certain time in the hospital he returned to his Irish home and died after about a year and a half. During this latter period his brother slept in the same bed with him and wore his clothes. His brother, who had never left Ireland, except 46 years before, when he had passed some time in England, became a leper, and was shown, in 1877, to the same society. There had been no other cases of leprosy known in the family.

Probably the most historic case of individual infection is that of the Belgian priest, Father Damien, born in 1840 almost under the shadow of his much-loved and once famous Louvain University. With just a slight stretch of the imagination, we in our own time can see Father Damien, leaving the harbour of Honolulu, the capital of the Sandwich Islands, with his consignment of fifty lepers of all ages, creeds, and classes, *en route* for Molokai, one of the smallest islands of the Pacific which constitutes the Sandwich group. To this desolate spot the Hawaiian Government, in 1865, banished all the lepers, some of royal blood. Here they were doomed to live while life should last; here they were doomed to die. Father Damien gave himself to the lepers in 1873, and counted the cost, for he contracted leprosy in 1882 and died in 1899. There are forms of death from which human heroism has ever shrunk—there is a living death, slow, painful, and repulsive.

[1] Dublin Journal of Medical Science, 1877.

It has fallen to my lot to have seen and examined a leprosy patient in the very last stages of this loathsome disease (the patient I now exhibit is by no means a good example). For those of you who have not had that experience permit me to give a description by an eye-witness: "A corner of the blanket was cautiously raised, a breathing object laid beneath, a face, a human face turned slowly towards us, a face on which scarcely a trace of humanity remained. The dark skin was puffed, a kind of débris, gummy and glistening, covered it, the muscles of the mouth had contracted and laid bare the grinning teeth, the thickened tongue lay like a fig between them, the eyelids curled tightly back exposing the inner surface, and the protruding eyeballs, now shapeless and broken, looked not unlike burst grapes."

THE EFFECTS OF BACTERIOLOGY UPON THE STUDY OF LEPROSY.

I shall now consider briefly a few of the more important advances in the study of leprosy to which clinical medicine and dermatology (especially the latter) owe to bacteriology. I prefer to take up these advances in the order in which they were applied, in the diagnosis of this case, rather than attempt a classification founded on their respective importance.

The Tuberculin Test for Leprosy.

In 1891 Goldsmidt, among many others, observed that lepers reacted with a rise of temperature on injection with Alt-tuberculin. Jadassohn failed to produce any reaction with tuberculin in four cases experimented upon. In the case under review I failed to get any reaction with Alt-tuberculin injected subcutaneously or by Von Pirquet's method.

The Wassermann Test.

The Wassermann test for leprosy stands thus, according to the conclusions of Howard Fox: (*a*) A positive Wassermann reaction is frequently obtained in cases of leprosy giving no history or symptoms of syphilis; and (*b*) the reaction occurs chiefly in the tubercular and mixed forms, rarely, if ever, in the anæsthetic form. Professor E. J. McWeeney applied the Wassermann test in this case, which was very markedly positive.

The Experimental Transmission of Leprosy to Animals.

In 1912 Bayon injected four rats on two occasions in the testis with ground-up nodules from a case of leprosy. Two rats did not show any microscopic lesions even after four months. One rat, however, developed four weeks afterwards a nodule at the site of inoculation, which grew to the size of a small pea. On puncture it showed acid-fast germs and necrosed tissue, some of which, no doubt, represented the original cells injected. After five weeks the rat died, but no acid-fast micro-organisms were found in the organs. The disease, if transmitted, was localised. The whole of the nodule was then injected subcutaneously into two other young rats. Three months after inoculation one of the rats developed small shotty nodules under the skin. The other rat developed three months after the second injection a nodule in the left testis. This broke down and was found to contain acid-fast rods in great quantity. This rat was killed four months after inoculation. At the site of injection and in the corresponding inguinal glands numerous acid-fast rods were found. One of these small glands was inoculated into the testis of another rat, and on killing it six months afterwards no acid-fast micro-organisms were found in the testis, but definite deposits were present in the inguinal glands, spleen, and liver.

In 1912–13–14, at Robben Island, Bayon made experiments on rabbits by means of the intraocular method. A single rabbit of the 30 inoculated has shown lesions in the iris and cornea.

Duval inoculated a series of animals—four rats, four white mice, and four Japanese dancing mice—with material taken from an acute case of leprosy (0·5 c.c. emulsified in 1 c.c. normal saline solution). Some were injected intraperitoneally, others subcutaneously. The two white mice which received intraperitoneal injections died 14 days later. At the necropsy both showed general infection of the peritoneum with leprosy.

These are some of the successful attempts to transmit leprosy to animals by means of inoculation or injection of leprous tissue. Mr. T. T. O'Farrell, F.R.C.S., pathologist to the City of Dublin Hospital for Diseases of the Skin and Cancer, inoculated a mouse with leprous tissue from my patient on March 31st. The animal so far shows no macroscopic symptoms.

Rat Leprosy.

In 1903 Stephansky, of Odessa, discovered amongst the sewer rats of his city a disease nearly akin to leprosy, not only clinically, but histologically and bacteriologically. Its presence amongst the sewer rats of Berlin, Paris, and London has since been confirmed.

Dean, of London, succeeded in isolating a diphtheroid organism which showed filamentary forms and reacted specifically with the serum of lepers. Thus (*a*) serum of rats inoculated with rat leprosy (i.e., acid-fast bacilli) agglutinated the diphtheroid (normal rat serum had no agglutinating properties for this micro-organism); (*b*) serum from a case of human leprosy agglutinated the acid-fast micro-organism from the rat (normal human serum had no agglutinating power); and (*c*) normal human serum and the serum from a tuberculous patient failed to agglutinate the diphtheroid, whereas the serum from a case of leprosy had distinct agglutinating properties.

The foregoing tests, in addition to the histological appearances and cultural behaviour of the micro-organism causing the disease in rats, suggest that rat leprosy is possibly related to human leprosy in a manner similar to that between bovine and human tuberculosis. Though rat leprosy seems spread over all the world, yet the 16,000 rats examined at Sandwich Islands and the 1378 at Cape Town gave negative results.

Other Animals than Rats Affected.

Rats are not the only animals affected by a disease akin to leprosy. Acid-fast micro-organisms which belong to the tubercle group cause disease in cattle, horses, and sheep. In cattle the disease is termed "enteritis hypertrophica bovis specifica." McFadyean, McGowan, and others have described Johnes's bacillus in the sheep, which differs from rat leprosy only in that the symptoms are confined to the digestive tract.

THE ARTIFICIAL CULTIVATION OF LEPROSY.

Sir Patrick Manson was the first to attempt the artificial cultivation of the micro-organism, and he was followed by Hansen and later by Neisser in 1881, with equal want of success. In

1910 Kedrowsky published his experiments, which took ten years to complete. His first inoculations from the nodules of three lepers gave as a result two distinct bacteria, one a non-acid-fast filamentary, interlacing, branching organism, the other a slightly acid-resisting diphtheroid. He injected these bacteria strains singly into mice and rabbits under the dura, intravenously and intraperitoneally, and observed the animals in some cases for two years. He found that whatever micro-organism he had injected the result was the same in all cases—viz., numerous acid-fast micro-organisms of the tubercle bacillus type in the viscera, from which they could be regained in pure culture as acid-fast rods. The resulting lesions resembled in some cases the type of tuberculosis induced in rabbits by injections of human tuberculosis; in others the lesions closely resembled those occurring in visceral leprosy of human beings.

Kedrowsky's acid-fast culture of Hansen's bacillus is a moist creamy-white culture which resembles avian tuberculosis. It grows only at incubator temperature on special media, such as placental juice agar, glycerine agar, or any similar medium suitable for tubercle. Multiplication is generally apparent in ten days, but may take three weeks to reach the maximum. No growth takes place at room temperature or on gelatin. It is acid-fast, cannot be bleached by 20 per cent. nitric acid in one minute after staining for five minutes with warm carbol-fuchsin. It is alcohol-fast and will withstand absolute alcohol for ten minutes.

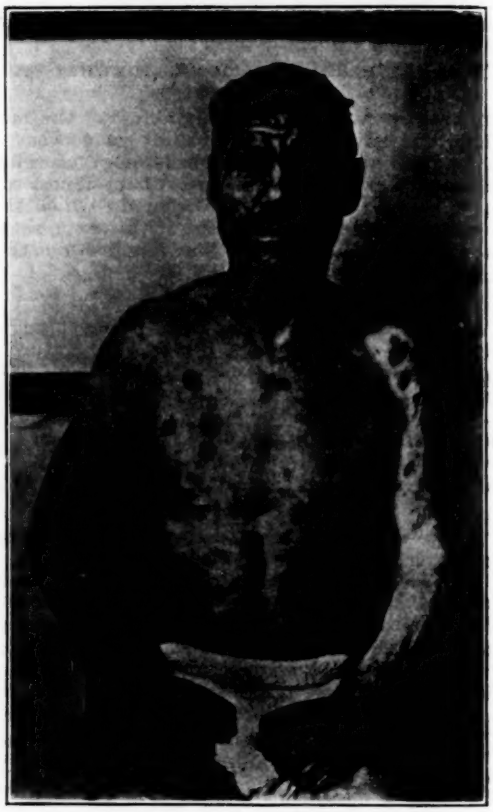
Bayon confirmed Kedrowsky's results in 1911, and remarks that every experiment connected with leprosy should be repeated scores of times. He further points out that the crucial experiment to be carried out with any culture isolated from a leper is not only to get it to acquire the acid-fast properties and the morphology of the bacillus seen in tissues, but also to succeed in producing lesions analogous to those seen in lepers and in rats spontaneously infected with B. lepræ muris.

Bearing in mind the great difficulties encountered in transmitting leprosy to animals from the injection or inoculation of nodules teeming with bacilli, many series of negative results must be faced. But negative results, even numerous, can never destroy a *single* positive observation.

ACCOUNT OF A CASE OF LEPROSY.

The history of the case which I now present is as follows:—

In March, 1915, the patient was admitted to the City of Dublin Hospital for Diseases of the Skin and Cancer, and the disease was diagnosed for the first time by me. His father was a soldier and had served through the Indian Mutiny, having reached the rank of colour-sergeant in the Hampshire Regiment. He retired after 21 years' active service, and died at the age of 58. The subject of these notes is 38 years old. He was born in Belfast in 1877 and migrated to Birr as a child, where he lived until 1895, when he joined the army and served in the Leinster Regiment for 12 years—two at home and 10 abroad—retiring in 1906. His foreign service included the following stations: Malta, one year; Bermuda, two years; Halifax, one year; Jamaica, one year; and South Africa, five years. He served through most of the South African campaign, and was present at the relief of Ladysmith. He had always enjoyed excellent health. He developed synovitis of the right knee-joint, the result of a kick in the football field, and was invalided home for months in 1899. In Malta he had colic for three weeks in 1897, and had contracted gonorrhœa in Halifax in 1898. He definitely states that he has never had syphilis, and I have failed to detect any signs of it. He left the army in 1906, and worked as a farm labourer in the neighbourhood of Birr until 1911, when he dislocated his left elbow and remained for four months in Birr Hospital. In the autumn of 1913 a crop of boils appeared on the back of the neck, and his eyes became red and somewhat swollen. He was again admitted to Birr Hospital, where he remained about five months, after which he was able to work, and did until August, 1914, when he sought to join the colours, but was rejected by the examining officer at Birr because of a skin rash. From August, 1914, he worked as a farm labourer until February, 1915. He was sent to Dublin in March, where he has since remained under my care. His mother died giving birth to her fifth child. Three sisters and one brother are alive and healthy. The brother is at present serving with the colours in France. The patient complained of feeling weak on slight exertion with occasional shooting pains in the back and the shoulders. At times he had sensations of "hot and cold" all over the body. He thought the skin of the face, especially over the forehead, was becoming too tight and going to crack. His eyes were often bloodshot. Sleeping and appetite and digestion were good. The face was broader than normal; the skin was thickened, dark-brown and glistening, especially over the forehead, of which the furrows were very deep. The folds over the eyebrows were prominent and studded with tubercles, and over these the hairs were scanty, especially at the outer side. The nose was thick, broad, and flattened, the chin broad and unusually prominent, the beard very scanty, and the lips thick. There were infiltrations and tubercles on the neck, shoulders, and nates, both grouped and disseminated. On the extremities the infiltrations and tubercles tended to be symmetrical. The hands were swollen and cushion-like on the back, ash-grey in colour; the thenar and hypothenar muscles were flat and flabby; inguinal glands shotty; reflexes normal; no anæsthesia; mucous membranes free.



A case of leprosy.

CONCLUSION.

In conclusion, I respectfully submit that the case which is the subject of this communication is not only instructive but interesting for the following reasons: 1. Because it possesses many of the clinical characteristics of tuberculated leprosy in the early stages, as insisted upon by both ancient and modern writers. 2. The case shows, as far as a single case can, that the Wassermann test for syphilis is not truly specific. 3. It shows, too, that the Wassermann test for leprosy is equally non-specific. 4. The case also shows that the tuberculin test in the diagnosis of leprosy carries with it but little conviction. 5. The portion taken from a leprous nodule of this patient and stained by the Ziehl-Neelsen method shows many bacilli, a few of which may be seen within the cells, while the majority are scattered about the lymph spaces.

Unquestionably the study of leprosy, in its *tout ensemble*, shows marked advance. This advance to me appears overshadowed by the tragedy of events, which testify that after all these centuries of expectancy and perseverance we have not a single cure of confirmed leprosy to the credit of science. Those cases cured by the Holy of Holies, as recorded in Scripture, come under quite a different category, of course.

I have borrowed freely from the experience and works of many; more especially is this the case as regards Bayon, Sir Patrick Manson, and Castellani. I am also much indebted to my colleagues, Sir Thomas Myles, who confirmed my clinical diagnosis, and to Mr. T. T. O'Farrell, who prepared the slides shown, and also carried out the inoculations. My indebtedness is in an especial manner due to Professor E. J. McWeeney, who kindly applied the Wassermann test at his laboratory at University College, Dublin.

ON PHANTOM ANEURYSMS.

BY SAMUEL WEST, M.D. OXON., F.R.C.P. LOND.,
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THE functional affections of the arterial system fall into two groups according as they are characterised by dilatation or by contraction, and each of these may again be subdivided according as the change is widespread or local. In most of those in which there is dilatation there is also arterial throbbing, widespread or local, and this is the usual symptom which directs attention to the dilatation. The instance commonly cited of general arterial dilatation and throbbing is exophthalmic goitre, though it is very doubtful if it be correct to refer this to a primary vaso-motor disturbance, for according to present views its cause is toxic.

Clinically it is the local dilatations that are of most interest, because of the difficulties of diagnosis with which they may be attended. The best recognised form is that which is described as "abdominal pulsation" or "pulsating aorta." This was called by Morgagni "aneurysme bâtard," and by Paget "mimic aneurysm." In my student days it was by no means uncommon to meet with these cases in the wards, and they had been for the most part sent into the hospital because of their having been diagnosed as abdominal aneurysm and treated as such without avail. Such cases are now much less seldom met with in the wards—not, I imagine, because they are really rarer, for they were never very common, but because the condition is now more generally recognised and treated on different lines.

Laennec gave an excellent clinical description of the pulsating aorta, to which little has been added since. It is generally stated that the dilatation of the abdominal aorta is general, and is in the longitudinal direction, and that there is no lateral distension, so that the fingers placed on each side of the vessel are not separated with each pulsation. This is not strictly accurate, though it is true that the pulsation is felt much more distinctly in the length of the vessel than transversely. At any rate, it is not local as in aneurysm. In the case in which owing to arterial disease there is general and not merely local dilatation, the tubular as distinguished from the saccular aneurysm, the other more important and characteristic difference comes in—viz., that in aneurysm the condition is permanent, and in the non-aneurysmal form it is transient or intermittent. Here I may quote Paget, who says in his well-known clinical lecture on this subject: "This mimicry is most frequent in the abdominal aorta, in which it has often been described as a nervous abdominal pulsation, but, so far as I know, it is not described as occurring in the subclavian, innominate, and carotid arteries, though in them it is not very rare, and sometimes not easy of diagnosis."

In the St. Bartholomew's Hospital Reports for 1880 I described a series of such cases under the title of "Mimic or Phantom Aneurysms." Phantom aneurysm is, I think, the better name, for it suggests the clinical category to which they really belong—viz., that of phantom tumours. The case which first attracted my attention to this affection was thus described. It was that of a man who complained of indefinite aches and pains. On examining the chest I noticed under the outer half of the left clavicle an oval pulsating tumour above which the veins were dilated, and in which a thrill was felt and a murmur audible. The tumour was of the size of a small hen's egg, though not quite so prominent as this might imply. The patient's chest was examined by two students before and after I examined it, both of whom reported nothing wrong, and on proceeding to demonstrate what I believed to be an axillary aneurysm I was surprised to find the tumour with the thrill and murmur gone. The patient was allowed to rest quietly for some minutes and was then again examined. All the physical signs returned—tumour, dilated veins, thrill, and murmur; but while under observation the tumour gradually subsided and the other physical signs decreased, until in two or three minutes all had disappeared. The experiment was repeated several times with equal success. The physical signs were, it was found, in no way affected by the position of the arms, although repeated movement of the arms quickly reproduced them; but so also did any movement, even walking with the arms hanging by the side. The signs were clearly those of temporary dilatation of the axillary artery, and this case might be described as one of mimic or phantom aneurysm.

In the paper above mentioned I described eight cases. Seven of the patients were males and, with the exception of one, all in the middle period of life. They all came to the hospital complaining of symptoms of debility or nervousness, and, in four of the cases, of discomfort in the subclavian region. Though two were muscular men, the others were not so, and some of them were decidedly weak and ill-developed. The swelling was unilateral in half the cases, and in the other half more marked on one side than on the other. A murmur occurred in all, and a thrill was noted in six. Dilated veins

were present on the affected side in five, and in one there was a difference in the pulses at the wrist. In all the physical signs were of temporary duration, though easily reproduced by any excitement, and in nearly all were unaffected by position. The eight cases all affected the axillary artery. Since that paper was written I have seen the condition not infrequently in other vessels—e.g., in the innominate and in the carotid. I have also met with it once in the arch of the aorta. The physical signs, which were quite definite, suggested the diagnosis of thoracic aneurysm, but they were not constant, being present at one time and absent at another. Ultimately they passed away completely without any evidence of permanent disease of the aortic arch developing.

In recent years these cases seem to have been almost lost sight of, but it is well that attention should be drawn again to them, for the physical signs may at a given time cause real difficulty in diagnosis if their transient character be not recognised.

Wimpole-street, W.

FURTHER EXPERIENCES IN THE TREATMENT OF GUNSHOT WOUNDS OF THE FEMUR BY THE MODIFIED THOMAS'S SPLINT.

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(With Supplement.)

WE have now had some further experiences with the splint described in THE LANCET of Feb. 13th last (p. 323), and as it may be of use to others it is worth putting on record.

The procedure adopted as a routine is as follows. The patient is anæsthetised on an X ray table and the fracture is examined with a screen. The splint is then applied and the leg is fastened to the footpiece in the following manner. First of all two strips of strapping are applied to the outer side of the leg as in the ordinary stirrup extension. The lower end of each piece is then split longitudinally, and the two tails thus formed are brought respectively over the upper and lower surface of the transverse foot bar, and secured in a figure-of-8 manner. The same is then done on the opposite side of the limb. A piece of gamgee tissue is then wrapped around the foot and a figure-of-8 bandage applied to fasten the foot to the footpiece. Two clove hitches are then placed over this one on either side, so that the pull on the leg is taken from the prominence of the heel and the top of the instep. The two ends on either side are then fastened to the transverse foot bar. By means of the strapping extension, the bandages and the clove hitches, the pull on the limb is evenly distributed. Extension is then produced by turning the traction screw until the splint is steady. The screen is then applied and the fracture reduced, so to speak, under the eye. If there is any lateral displacement it can be remedied by pressure on the opposing sides of the limb, and this pressure can be made permanent by traction with a bandage placed round the corresponding side bar. The patient is then taken back to bed, and if necessary given an injection of morphia when he comes to. It is generally found that by the following day the muscles have given up the struggle and the bandages and clove hitches can be got off; the steady pull provided by the strapping extension suffices to keep the bones in position. It is not, of course, necessary to use an anæsthetic and reduce the fracture at one sitting, as the same result may be obtained by prolonged steady traction, but on the whole the method above described gives in the end the least discomfort to the patient. From time to time the patient is taken back to the X ray room and the position of the fracture examined and any small readjustment made. This is all the more important in cases where there are large wounds and where the bone is comminuted, as a little lateral displacement is likely to occur, but as the bone consolidates this danger soon passes off. The limb should also be measured now and again, and any shortening corrected by screwing up the extension screw.

Some skiagrams are appended to this paper which show the appearance of fractures when they arrived here and after they had been treated by an anæsthetic and extension.

A fracture (Figs. 1 and 2) in the upper third of the femur was perhaps the most remarkable. There was, as can be seen in Fig. 1, very great abduction of the upper fragment and longitudinal splintering of the bone. There was shortening to the extent of 1½ inches. The limb had been treated by a long outside splint. It was about as bad a fracture as one could wish to test. It certainly was very remarkable to see in the screen the abducted fragment gradually come down and assume its proper alignment, although 12 days had elapsed since the receipt of the injury. Fig. 2 shows the same femur six weeks later when the splint had been removed. There was firm union and no shortening.

Another case (Case 2), which reached us 36 days after the receipt of the injury, was one of the well-known so-called triangular fractures. (Figs. 3 and 4.) It had been treated in a Thomas's knee splint with a simple extension. Here, again, the shortening was reduced from 2 inches to nothing. Unfortunately, no X ray plate was taken before the application of the splint, but Fig. 3 shows the appearance after the extension splint had been applied. Fig. 4 shows the same femur seven weeks later. Clinically there was firm union and no shortening. This fracture is perhaps one of the most difficult to treat, as there are two oblique fractures and an intervening loose fragment to be dealt with. Perhaps closer apposition might have been obtained with bolting or plating, but it would have entailed a very big operation.

DESCRIPTIONS OF FIGS. 1 TO 9. *(See Supplement.)*

FIG. 1.—Case 1. Appearance of femur 12 days after injury before application of splint; 1½ inches shortening.

FIG. 2.—Case 1. Same femur six weeks later. Good union and no shortening

FIG. 3.—Case 2. Appearance of femur 36 days after injury and three days after application of splint; no shortening. Before application of splint 2 inches shortening.

FIG. 4.—Case 2. Same femur seven weeks later. Firm union and no shortening.

FIG. 5.—Case 3. Appearance of femur 12 days after injury before application of splint; 1½ inches shortening.

FIG 6.—Case 3. Skiagram of same femur taken the next day, after application of splint; no shortening.

FIG. 7.—Case 4. Appearance of femur on admission five days after injury before application of splint; 1½ inches shortening.

FIG. 8.—Case 4. Same femur seven days later; no shortening; good position.

FIG. 9.—Case 5. Appearance of femur of a Ghurka after union had occurred. Shortening reduced from 2 inches to nothing.

Figs. 5 and 6 (Case 3) show the appearances before and after treatment of the femur of a man who was admitted 12 days after the injury. The limb had been treated by an ordinary Thomas's knee splint, and there was shortening of 1½ inches. There was no shortening at the time of the second photograph.

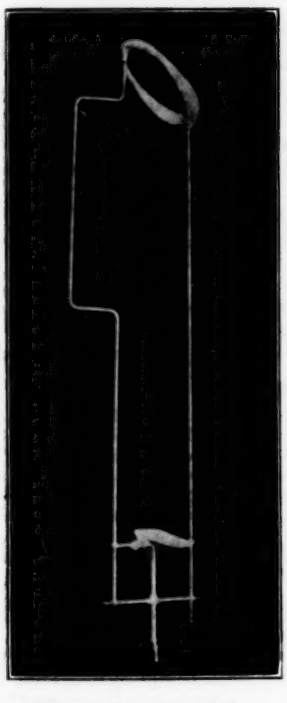
Case 4 was that of a man suffering from a double fracture of the femur, with comminution of the middle fragment. (Figs. 7 and 8.) He was admitted five days after the injury with 1½ inches shortening of the limb. Fig. 7 shows the position of the fragments before, and Fig. 8 after, the application of the extension. The shortening was reduced from 1½ inches to nothing.

Fig. 9 shows the skiagram of a Ghurka after union had occurred. It shows good alignment but thickening of the shaft such as always occurs after extreme comminution. This man arrived with a so-called explosion wound on the front of his thigh which measured 6 × 4 inches and with 2 inches of shortening, but in spite of all necessary disturbances the anterior and posterior wounds healed rapidly. There was no shortening and good union.

Experiences show that there is no fracture that is not amenable to treatment by this splint, provided too great an interval has not existed between the receipt of the injury and the commencement of treatment.

The great bar to reduction is the growth of callus, as this soon fixes the bones, and it is disappointing very often to be able to pull out the fragments so that the limb is the correct length, but to be unable to get good alignment in consequence of the callus cementing the comminuted fragments and preventing the main fragments taking up the proper position. Here an operation is necessary, but this procedure is not only made easier by the extension produced by the splint, but can be carried out with the splint in position, the powerful extension obtainable being a very great help in adjusting the fragments.

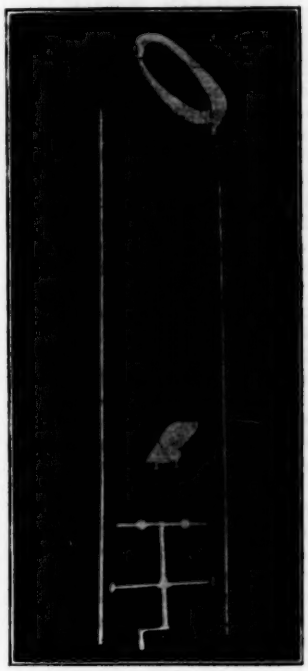
FIG. 10.



Cranked bar fixed to the outer side of the splint.

As the open operation for plating a fractured femur is usually carried out through an incision made on the outer side of the thigh, the straight external bar of the splint may cause some obstruction to the necessary manipulations. To obviate this a cranked bar is substituted for the ordinary external bar. (Fig. 10.) This cranked bar is made from a metal rod which has the same diameter as the ordinary straight bar of the splint and can be substituted for the latter by screwing it into the socket of the pelvic ring. It can be seen that by screwing up or unscrewing the cranked bar the crank itself will describe a circle and can be fixed in any position in this circle by tightening the screws of the transverse bar at the foot of the splint. When the cranked bar is fixed on the outer side of the splint the most convenient direction for the projection of the crank is outwards, outwards and forwards, or outwards and backwards; when fixed on the inner side of the splint, forwards, or forwards and inwards, to avoid contact with the opposite thigh. The cranked bar, besides facilitating the performance of open operation, is also useful when a large dressing is required or when the pelvic ring happens to be rather small for the patient, in which case the position of the straight lateral bars close to the skin of the thigh may make the dressing of a lateral wound an awkward proceeding.

FIG. 11.



Component parts of the splint.

Another modification of the splint which has been used is the substitution of a transverse thigh ring for the usual oblique crotch ring. It has been found that all the pressure of the counter extension is transmitted by the bar on the inner side to the inner portion of the pelvic ring, and is thus conveyed to the ischium. The upward projection of the outer portion of the pelvic ring is therefore not really necessary. This modification is useful when the wound is situated over the upper part of, or above, the great trochanter. It also allows of a great abduction of the limb, which position may be indicated in fractures involving the trochanter or neck of the femur.

Fig. 11 illustrates the component parts of the splint, which can be taken to pieces and packed into a convenient shape for transit. The cushion seen below the crotch ring is a wedge-shaped pad of horsehair covered with leather, and is inserted under the outer side of the ring to maintain the latter in its proper position and to ensure its getting a bearing on the tuber ischii. This pad has latterly been used in place of the pillows described in the former communication.

There can be no doubt that the efficient extension produced by this splint is a factor in the treating of the wound, as well as in obtaining the proper alignment of the bones. The traction on the muscles prevents pocketing of the discharges and consequent extension of the septic processes.

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NOTES OF A CASE OF UNDULANT FEVER TREATED BY AN AUTOGENOUS VACCINE.

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Private ——, aged 23 years, was admitted to the West London Hospital on Oct. 7th, 1914. At that time he was unable to give a very accurate account of his illness, but the following details were elicited from him. Some little time previously he had returned with his regiment from Malta, where he had been stationed for some time. He had been on furlough for a few days, and first "felt seedy" on Oct. 2nd. He was "worse" on Oct. 3rd, "developed a cough," and was found to have a temperature of 101° F. Later he was seen by a private practitioner, who advised his removal to the hospital, where he was admitted with the provisional diagnosis of "early pneumonia." At a later date the information was elicited that he had been vaccinated against enteric fever two and a quarter years ago.

On admission he was found to have a temperature of 104·2° F., with a pulse-rate of 108 and respirations 32. He was sweating slightly, but was not unduly dyspnœic, and was in no distress. Physical examination revealed definite signs of bronchitis, the signs being more marked at the right base posteriorly. The tongue was much coated. No other organic signs were detected. During the next few days he remained in much the same condition as on admission, the temperature ranging from 104·2° to 100·6°, with a pulse-rate of 112 to 64 and respirations 32 to 24. The bowels were not opened during the first three days. On Oct. 9th the urine showed a trace of albumin. As a result of a saline aperient the bowels were moved three times on the 10th. Subsequently to this date, with one exception, the bowels were only moved with enemata, which were given on alternate days. The urine was again examined on four other occasions. On one (Oct. 23rd) there was a faint trace of albumin; otherwise there was nothing abnormal.

The following notes of the progress of the case are recorded:—

10–10–14.—The fever persists. There are still signs of diffuse bronchitis in the chest. The tongue is still much coated. The abdomen is somewhat distended and the spleen is just palpable on deep inspiration. The heart is normal; there are no abnormal signs in the nervous system. The report on the Widal reaction has not yet been received.

17–10–14.—Fever of the "continuous" type persists. The patient is now definitely thinner than he was on admission. The mind is clear. There is no night delirium. The stools are not of the typhoid type. His pulse is good. The tongue is cleaner. During the last 24 hours there has been a purulent discharge from the right ear. Prior to this date it had been noted for several days that the patient was getting somewhat deaf in both ears. No true "typhoid" spots have developed. There are no additional signs in the lungs. All the reflexes, deep and superficial, are normal. The heart sounds are a trifle blurred now, but there is no clinical evidence of dilatation. The pulse is regular and not dicrotic.

18–10–14.—Though very drowsy at times, the patient can be very easily roused, and takes his nourishment well. The mind remains clear. He takes little interest in his surroundings and is still obviously deaf. He suffers from a good deal of irritable cough. The fauces are dry and glazed. The expectoration is glairy and mucoid. There is slight improvement in the ear discharge. Examination of the lungs still shows a diffuse bronchitis with weak vesicular breath sounds and moist sounds. There are not (and never have been) any signs of consolidation. The abdomen is still distended. It is doubtful if the spleen can really be felt now on deep inspiration. No spots have developed. The first sound of the heart is still blurred. All the reflexes are natural. The skin of the soles and the palms are not unduly yellow.

19–10–14.—To-day the bronchitic signs are very marked, more especially at the right base. The ear discharge is less.

20–10–14.—Condition unchanged. Sputum less. Heart sounds clearer.

22–10–14.—There is no change in the patient's condition. He sleeps well and takes food well. The pulse is good and regular. There are no subjective or objective signs in the joints.

24–10–14.—There is very little change in the patient's general condition. The tongue is cleaner. His mentality is good. In the lungs there are still diffuse bronchitic signs, now more especially over the right lower and middle lobes. Over the right lower lobe posteriorly there is now slight impairment to percussion. There are no abnormal signs in the nervous system.

26–10–14.—The tongue is cleaner. He is still very deaf, but the ear discharge is less. The signs in the lungs are less pronounced to-day. He takes his food very well.

27–10–14.—The patient was removed to the Royal Albert Dock Hospital to make room for the admission of wounded soldiers.

The following pathological investigations were made by Dr. R. R. Elworthy, to whom I am much indebted.

Blood Examinations.

10–10–14.—White corpuscles, 5600; polymorphs, 79 per cent.; monomorphs, 20·5 per cent.; transitional, 0·5 per cent. Widal, B. typhosus, negative. To be repeated.

13–10–14.—Widal, B. typhosus and paratyphoid B, negative.

14–10–14.—Widal, paratyphoid A, negative.

20–10–14.—Blood culture. An active Gram-negative. Micrococcus obtained by blood culture which grew easily on agar. Agglutination reactions: Patient's serum *v.* a known Malta fever = good clumping up to 1 in 80 dilution; *v.* micrococcus from the blood stream = good clumping up to 1 in 80 in 30 minutes. Normal serum gave no reaction with either the known M. melitensis or the patient's organism

24–10–14.—Complement fixation *v.* M. melitensis. An absolute fixation was obtained with as high a dilution of serum as 1 in 72. Higher dilutions were not attempted, as it was thought that the reaction would fade long before this point was reached.

Urine Examinations.

19–10–14.—Staphylococci and diphtheroids only.

21–10–14.—I was unable to isolate the micrococcus from this specimen.

Sputum.

8–10–14.—Pneumococci, staphylococci, M. catarrhalis. No tubercle bacilli.

At a later date.—No tubercle bacilli. Staphylococci; also a Gram-negative micrococcus resembling M. melitensis.

21–10–14.—I was unable to isolate the micrococcus. Another sample of sputum did not contain any suspicious-looking cocci.

Throat swab (soon after admission).—Staphylococci, M. catarrhalis, and a few B. Hofmann.

Differential Diagnosis in the Early Stages of the Disease.

Pneumonia.—The acute onset in a person previously healthy with a high temperature, cough, and signs in the lungs not unnaturally made the diagnosis of early pneumonia not improbable. With the patient under observation, and although the signs in the lungs persisted, being especially marked for several days at one base, it was easy to exclude this condition. The long persistence of the fever, the absence of any definite subjective or

objective dyspnœa, the relatively low respiration-rate, the type of sputum, and the low white count were confirmatory points against pneumonia.

Enteric fever.—At first this diagnosis appeared to be the most likely one to account for the signs and symptoms. The fact that the patient had been vaccinated against enteric was not disclosed until some days later. The persistent fever of the continuous type, the relatively low pulse-rate, the aspect of the patient, the pronounced constipation with slight abdominal distension, the drowsiness, the progressive deafness prior to the ear discharge, the slight enlargement of the spleen, and the low white count appeared to substantiate this diagnosis. On the other hand, the early marked bronchitis, the relatively good mental and general state of the patient, and the persistence of the negative Widal were unlike a case of enteric fever, in which the pulmonary signs are predominant.

Undulant fever.—The fact that the patient had come direct from Malta, although he did not know of any case of fever in the regiment and despite his belief that there was no undulant fever prevalent in Malta at the time, made it imperative to investigate the case on these lines. The correct diagnosis, though suspected, was established by the series of careful laboratory observations carried out by Dr. Elworthy. Prior to this determination two other conditions were discussed; one was miliary tuberculosis of the "typhoid" type. This, however, seemed improbable owing to the negative character of the sputum, the low white count, and the relative well-being of the patient, despite the marked signs in the lungs and the persistent fever. Secondly, in the absence of a definite leucocytosis and in the presence of the negative blood culture for any organism other than the micrococcus the case did not appear to be one of acute progressive endocarditis or pyæmia of the "typhoid" type.

The patient was admitted to the Royal Albert Dock Hospital on Oct. 27th with a diagnosis of undulant fever, and was placed under the care of Dr. F. M. Sandwith. On admission he was found to be a thin, anæmic man, very deaf, and with a more or less constant cough. He stated that the deafness had only appeared during his illness. He denied that he had ever consumed any goat's milk. The lips and tongue were dry, the latter being covered with white fur. The pharynx was not injected. The teeth were very carious. On examination nothing abnormal was to be made out in the heart, either in position, size, or quality of the sounds. The lungs showed coarse râles all over, most marked at the bases, but there was no dullness on percussion. The sputum was somewhat thick and tenacious, but not blood-stained. Nothing abnormal was to be made out in the abdomen. The spleen was not enlarged and no joints were swollen nor was any complaint made of pain therein. The patient did not complain of sweating. The urine showed no albumin or sugar. The temperature on admission was 102° F. On Nov. 3rd micrococcus melitensis was grown from a blood culture. The patient's condition for the first month, during which he was treated on general lines, showed no improvement, the temperature chart exhibiting the typical undulant type of Mediterranean fever. During this time, although no definite joint pains were complained of, the patient said he experienced a sensation of general stiffness. In the middle of November it was noted that he was having frequent night sweats of a profuse character, but his deafness had much improved.

In view of the fact that the patient was making no material progress, it was suggested by Dr. Sandwith at the end of November that the effects of an autogenous vaccine be tried. Accordingly a vaccine was prepared by one of us (H. B. N.) and an initial dose of approximately 200,000,000 organisms was administered on Dec. 4th. No ill-effects followed the administration of this dose, and on the 6th it was seen that the temperature had fallen to normal, and with the exception of a slight rise to 99° F. on the evening of that day and two subsequent rises to 99°, it remained practically at the normal point until Dec. 12th. (See chart.) It then commenced to mount up again in the typical manner of undulant fever until the 15th, when a second dose of the vaccine was given (200,000,000), and up to Jan. 4th, 1915, the temperature, beyond a few slight rises to about 99·2°, remained fairly normal, and the patient showed marked improvement in his general condition. A third dose of vaccine was administered on Dec. 24th as the temperature was a little irregular. The patient expressed himself as feeling very well as a result of the injections. Sweating was absent; he increased in weight and had a general feeling that he was improving markedly. On Jan. 4th a fourth dose of vaccine was given, but on the 5th the temperature suddenly rose, accompanied by rigor, to 105°, and a typical attack of lobar pneumonia developed. (It should be mentioned that at this time there were some three acute cases of pneumonia near him in the ward.) The temperature fell by lysis and remained somewhat irregular till Jan. 26th, when it finally came down to normal and remained so until the patient's discharge on April 7th.

It will be seen that in all only four doses of the vaccine were administered. In view of the known inefficacy of ordinary medicinal preparations to in

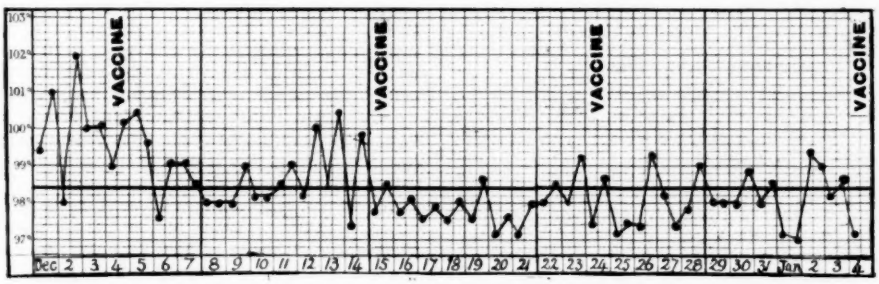

Chart to show effect of vaccine on the temperature.

any way alleviate the symptoms or control the progress of this disease it is satisfactory to record that in this case at any rate marked improvement was obtained by the use of an autogenous vaccine.

Major J. C. Kennedy [1] has reported a case of the disease treated with success by an autogenous vaccine, but the doses he employed were very much smaller than those we used. At first he gave a dose of 100,000,000 organisms, but finding that the patient seemed worse after this he subsequently employed much smaller doses (from 6 to 9 millions) at short intervals, and the patient then rapidly improved.

In considering what dose we should use we were chiefly guided by Bassett-Smith's early work with stock vaccines.[2] He employed doses of over 400,000,000 organisms injected about every 10 days, and he recorded no particularly alarming symptoms as a result. We therefore felt justified at any rate in administering doses of approximately half the the strength employed by him, and, as has been stated, no marked constitutional disturbance ensued as a result of their employment.

The report of this case, coupled with the marked improvement produced by the employment of an autogenous vaccine, may encourage others to try a similar line of treatment. Previous reports of treatment with stock vaccines have not been very encouraging.

THE USE OF QUININE IN THE TREATMENT OF EXPERIMENTAL GASEOUS GANGRENE;

WITH NOTES ON THE VALUE OF QUININE HYDROCHLORIDE AS A GENERAL ANTISEPTIC.

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IN the course of experiments in the production and treatment of gaseous gangrene in laboratory animals, the following observations on quinine hydrochloride have been made. In view of their possible application to the treatment of clinical gaseous gangrene, and also of other infections, it seems advisable to publish them as a preliminary note pending further investigations.

Since the activity of the bacillus aerogenes capsulatus of Welch (frequently termed "perfringens") seemed to be due to or associated with an active ferment elaborated by the growing organisms, quinine was selected on account of its antiferment action as being likely to show an inhibitory effect upon the growth of this bacillus.

Preliminary experiments on the action of varying concentrations of quinine hydrochloride upon the growth and gas production of the bacillus in dextrose broth were undertaken. It was found that growth and gas production were consistently inhibited when the quinine concentration in the fermentation tube reached 0·075 per cent. Similar experiments with the growth of the bacillus in the deep agar medium gave the point of concentration at which inhibition occurred as varying between 0·100 per cent. and 0·125 per cent. A third experiment was then undertaken, the medium tested being a thick pus recovered from a case of empyema which contained the bacillus aerogenes capsulatus, the colon bacillus, and the bacillus pyocyaneus. In this menstruum it was found that the B. aerogenes capsulatus was killed after exposure for ten hours to a concentration of 0·100 per cent. of quinine hydrochloride. The colon bacillus was killed after exposure for a similar period to a concentration of 0·225 per cent. The B. pyocyaneus still grew after exposure for a similar period to a concentration of 0·500 per cent.

With a view to establishing some sort of a standard of bactericidal value for the quinine solution a parallel series of tubes of dextrose broth inoculated with B. aerogenes capsulatus were treated with quinine or carbolic acid in varying amounts. In this series it was again found that the bacillus was repeatedly inhibited by a concentration of 0·075 per cent. of quinine, while it continued to grow and form gas in a concentration of 1·900 per cent. of carbolic acid.

In order further to determine the relative values of quinine and of carbolic acid in the sterilisation of pus, two different types of pus were used as menstrua and the following tests were made.

Pus A, obtained from necropsy in a case of empyema and lung abscess, was very thick and contained an admixture of bacteria to which was added a heavy inoculation of the B. aerogenes capsulatus. The pus then contained the latter bacillus, the colon bacillus, streptococci, and the B. pyocyaneus. Out of a series of six tubes containing 5 c.c. each of the pus, five were treated with varying percentages of quinine and carbolic acid; the sixth was reserved for control. They were examined at intervals of 10 minutes, 1 hour, 4 hours, and 24 hours. At these intervals heavy inoculations of the contents of each tube were made into various nutrient media.

The following charts give the graphic representation of the results obtained as regards (1) B. aerogenes capsulatus, and (2) other bacteria.

CHART I.—*Growth of B. Aerogenes Capsulatus after Exposure to Equal Concentrations of Quinine Hydrochloride or of Carbolic Acid for Different Lengths of Time.*

Pus A.

—	Quinine.						Carbolic acid.					
Concentration.	Control.	·075	·20	·37	·50	·75	Control.	·075	·20	·37	·50	·75
After 10 min.	G	G	G	G	G	G	G	G	G	G	G	G
,, 1 hr.	G	G	G	G			G	G	G	G	G	G
,, 4 hrs.	G						G	G	G	G		G
,, 24 hrs.	G	?					G	G	G	G	G	

G = Growth on reinoculation. ? = Result in doubt.

CHART II.—*Growth of Bacteria other than B. Aerogenes Capsulatus after Exposure to Equal Concentrations of Quinine Hydrochloride or of Carbolic Acid for Different Lengths of Time.*

Pus A.

—	Quinine.						Carbolic acid.					
Concentration.	Control.	·075	·20	·37	·50	·75	Control.	·075	·20	·37	·50	·75
After 10 min.	G	G	G	G	G	G	G	G	G	G	G	G
,, 1 hr.	G	G	G	G			G	G	G	G	G	G
,, 4 hrs.	G	G			G		G	G	G	G	G	G
,, 24 hrs.	G	G					G	G	G	G	G	G

G = Growth on reinoculation.

The series of experiments on Pus B was run in a similar manner, but with slightly different concentrations of the antibacterial agents. The pus in this case, also obtained from empyema, was of thinner consistency and contained streptococci, to

[1] Journal of the Royal Army Medical Corps, September, 1910.
[2] Journal of Hygiene, 1907.

which was added gas bacillus. The results were again charted and growth recorded (1) for the gas bacillus, and (2) for the streptococcus.

CHART I.—*Growth of B. Aerogenes Capsulatus after Exposure to Equal Concentrations of Quinine Hydrochloride or of Carbolic Acid for Different Lengths of Time.*

Pus B.

—	Quinine.						Carbolic acid.					
Concentration.	Control.	·025 %	·050 %	·075 %	·12 %	·25 %	Control.	·025 %	050 %	·075 %	125 %	2·0 %
After 10 min.	G	G	G	G	G	?	G	G	G	G	G	G
,, 1 hr.	G	G	G	G			G	G	G		G	G
,, 4 hrs.	G						G	G	G	G	G	G
,, 24 hrs.	G						G	G	G	G	G	G

G = Growth on reinoculation. ? = Result in doubt.

CHART II.—*Growth of Streptococcus after Exposure to Equal Concentration of Quinine Hydrochloride or of Carbolic Acid for Different Lengths of Time.*

Pus B.

—	Quinine.						Carbolic acid.					
Concentration.	Control.	·025 %	·050 %	·075 %	·12 %	·25 %	Control.	·02 %	050 %	075 %	·12 %	·25 %
After 10 min.	G	G	G	G	G	G	G	G	G	G	G	G
,, 1 hr.	G	G	G	G			G	G	G		G	G
,, 4 hrs.	G					G	G	G	G	G	G	G
,, 24 hrs.	G						G	G	G	G	G	G

G = Growth on reinoculation.

It will be seen from examination of the charts that quinine caused the disappearance of the gas bacillus at a point of concentration at which carbolic acid was completely ineffectual. In concentrations of carbolic acid higher than those charted the gas bacillus has survived longer than any of the other organisms in either specimen of pus. It has grown and formed gas even after an exposure for 24 hours to a concentration of more than 1 per cent. In the case of quinine, however, the gas bacillus has usually been the first to disappear from mixed pus in the weaker concentrations. The colon bacillus has usually followed closely; the B. pyocyaneus has generally been the most resistant. It will also be seen that quinine has been more effective than carbolic acid against the other bacteria in the pus.

On the basis of these demonstrations of the efficiency of quinine against the gas bacillus, the following experiments on its use in the prophylaxis and treatment of experimental gaseous gangrene were undertaken. The animals used were full-grown guinea-pigs; the cultures were two strains of the B. aerogenes capsulatus; one obtained in pure culture from the heart's blood at the necropsy of a patient dying from the infection, the other obtained in pure culture from the blood of a living patient suffering from extensive gaseous gangrene of the thigh. The two strains proved equally virulent, invariably killing a 500-gm. or 600-gm. guinea-pig after injection of 1/5th c.c. of a 24-hour broth culture. The necropsy findings were characteristic, showing extensive muscle degeneration, formation of gas, and, later, bloody subcutaneous exudate. The bacillus could nearly always be recovered from the heart's blood at death. The following is a list of the experiments in the order undertaken:—

Experiment 1.—Six guinea-pigs, all inoculated in the thigh with 1/4 c.c. of 24-hour broth culture. Two were reserved as controls. Four were treated, two of them by immediate injection of 1 c.c. of 2·5 per cent. quinine hydrochloride solution, the other two similarly injected half an hour after inoculation. Both controls died within 18 hours. Three of the four treated recovered. The other died at 36 hours, having lived twice as long as the controls.

Experiment 2.—Five guinea-pigs, inoculated in the thigh with the same dosage (1/4 c.c.). Two were reserved as controls. Three were treated by injections into the muscles with 1 c.c. of quinine hydrochloride about 15 minutes after inoculation. The controls died within 18 hours. Two of the treated guinea-pigs recovered. The other died at 42 hours.

Experiment 3.—Six guinea-pigs, inoculated in the thigh with the same dosage (1/4 c.c.). Two were reserved as controls. Four were treated after half an hour by injection of 1 c.c. of 2·5 per cent. quinine hydrochloride solution at the site of inoculation. The controls died, one at 24 hours, one at 48 hours. One of the four treated recovered. The others died at about 30 hours.

Experiment 4.—Four guinea-pigs, injected subcutaneously with the same dosage (1/4 c.c.). Two were reserved for controls. The other two were injected after 15 minutes with 1 c.c. of 2·5 per cent. quinine hydrochloride solution in the same region as the inoculation. The controls died within 18 hours. One of the treated pigs failed to develop the disease. The infection progressed in the other and it died after 42 hours.

Experiment 5.—Four guinea-pigs, inoculated into the muscles of the thigh with the same dosage (1/4 c.c.). Two were reserved as controls. Two were treated by injection of quinine into the affected thigh six hours after inoculation. The controls died at 48 and 72 hours respectively. The two treated pigs recovered.

Experiment 6.—Four guinea-pigs. Two controls were inoculated in the thigh with the usual dosage of the bacillus. The other two were injected in the thigh with 1 c.c. of 2·5 per cent. quinine hydrochloride, and half an hour later were inoculated in the same thigh with the same dosage of the bacillus that the controls had received. All four were killed 18 hours later and the legs examined. The treated animals showed a slight infective process. In the untreated controls the gangrene had progressed to a point of considerable muscle necrosis.

Experiment 7.—Four guinea-pigs were anæsthetised and after the removal of a portion of the skin a punctured wound was made in the muscle of the thigh with a capillary pipette. The wound was injected with the usual dosage of the bacillus. The wounds of the two reserved as controls were then irrigated with normal salt solution. The wounds of the other two were irrigated with a 2·5 per cent. solution of quinine hydrochloride. The controls died within 56 hours. One of the treated animals recovered.

Experiment 8.—Five guinea-pigs were anæsthetised. A portion of skin was removed from the thigh and a punctured wound was made in the muscle with a capillary pipette. The wounds were then injected with 1/20 c.c. of the bacillus. Three reserved as controls were irrigated with a normal salt solution; the other two were irrigated with 1 c.c. of 2·5 per cent. quinine hydrochloride solution. The three controls died within 18 hours. The two treated animals died about 10 hours later.

Experiment 9.—Five guinea-pigs were anæsthetised. A portion of skin and a section of muscle were removed from the thigh, making a wound in the muscle about 5 mm. deep by 2 mm. in diameter. 1/20 c.c. of the culture of the bacillus was instilled into the wound. After half an hour the wounds of the two reserved for controls were washed thoroughly with 2 c.c. of normal salt solution. The wounds of the other three were washed with an equal amount of 2·5 per cent. quinine hydrochloride. One of the controls died within 12 hours. The other developed gaseous gangrene of the thigh, from which it is still suffering. The three wounds treated with quinine solution healed cleanly, without discharge or sign of infection, and the animals are now completely recovered.

Three additional experiments were performed:—

A. Four guinea-pigs, inoculated in the thigh with the usual dosage, were killed at intervals of 1, 2, 4, and 6 hours after inoculation. The infected thighs were found to show gaseous distension of the

muscle sheaths and softening of the muscle after two hours. The cases healed must therefore be regarded as representing a more advanced stage of the infection than the time after inoculation would appear to indicate.

B. With a view of determining the local toxicity of quinine injection varying amounts of a 2·5 per cent. solution were injected into the muscles of the thigh, the animals killed at varying intervals, and the tissues examined. No macroscopic pathological effect could be demonstrated.

C. In order to determine the possible inhibition by quinine of the tryptic degeneration of discharges from the wounds (to which is attributed by Sir Almroth Wright the alterations or "corruption" of these discharges from an anti-bacterial substance into a suitable medium for bacterial growth), the concentration of quinine required to prevent tryptic digestion of egg albumen was investigated. It was found that no digestion occurred in solutions in which the quinine concentration reached 0·37 per cent. The concentration used in the foregoing experiments has been 2·5 per cent.

The results of the animal experiments are grouped in the following table:—

Untreated.			Treated with quinine hydrochloride.					
Number.	Number died.	Mortality per cent.	Number.	Number died.	Mortality per cent.	Recovered.	Recovered per cent.	Recovered or improved.
20	20	100	22	9	41	13	59	82%

Summary.

It will be seen that whereas all the 20 untreated animals died (100 per cent.), only 9 of the 22 animals (41 per cent.) receiving quinine died from the infection, while several other treated animals which eventually died were evidently temporarily benefited by the treatment, as manifested by the extended duration of life above that of the control. It may be noted that the usual course of the fatal infection following intramuscular inoculation has been under 30 hours.

Conclusion.

The results of the observations may be briefly summarised as follows:—

A. Quinine has shown a marked bactericidal activity against the gas bacillus. 1. It has inhibited its growth *in vitro*, where it was ten times as effective as carbolic acid. 2. It has reduced the mortality from gaseous gangrene in animals from 100 per cent. to 41 per cent.

B. Quinine has shown strong laboratory evidence of value as a general antiseptic. 1. Its general bactericidal power was higher than that of carbolic acid. It was especially effective in a menstruum of pus. 2. It did not damage healthy tissue in local injections of effective concentrations. It is known to produce local anæsthesia, frequently a desirable result. 3. It produced no symptoms of intoxication in the animals treated. It was used in hypertonic solution. 4. It showed a strong antitryptic action *in vitro*.

Upon the evidence of these experiments a 1 per cent. solution of quinine hydrochloride is now being tried in some of the wards at this hospital for the treatment of gaseous gangrene and other infections. A report on the result of its use will be published later.

Paris.

OBSERVATIONS ON SOME OF THE

AGGLUTINATION REACTIONS OF THE BLOOD OF SOLDIERS INOCULATED AGAINST TYPHOID FEVER.

BY D. I. DAKEYNE, M.B., CH.B., D.P.H. MANCH.

[The following is a preliminary account of a research carried out, under the direction of Professor S. Delépine, at the Public Health Laboratory, Manchester University. Part of the expenses in connexion with this inquiry were defrayed by a grant made by the Medical Research Committee.]

THE blood of persons who have been inoculated with dead cultures of the bacillus typhosus has for several months after inoculation the power to agglutinate the bacillus typhosus, but there are some exceptions to this general rule. This investigation was undertaken originally to ascertain whether there was anything in the history of soldiers who had been vaccinated against typhoid fever which would indicate that the absence of the agglutinative power had any relation to the degree of immunity conferred by vaccination. Agglutination is a reaction which is not in itself evidence of protection, but agglutination and protection are brought about by the same determining factor—viz., a natural or artificial bacterial infection—and it may reasonably be argued that agglutination is capable of yielding useful information regarding the common determining factor. When within a certain period the blood of an individual vaccinated against typhoid fever is incapable of agglutinating a typical strain of the bacillus typhosus something unusual must have occurred; the inoculation may have been faulty for one or more of several reasons; the kind or strain of bacillus used for testing the blood may be different from the one used in preparing the "vaccine"; the individual inoculated may have been incapable of reacting like average persons, &c.

The preliminary inquiry, of which this paper gives a summary, deals chiefly with the *power which the blood of persons inoculated with dead typhoid bacilli has to agglutinate the bacillus typhosus* and some allied bacilli, and is based upon the examination of 280 soldiers who had received one or more injections of antityphoid "vaccines" within the previous 12 months. The tests were made, according to the Delépine method, with dilutions of approximately 1/20 in current work, controlled when thought desirable by further tests with exactly measured 1/30 dilutions. The time limit was in all cases two hours. The sera were tested against a typical bacillus typhosus, also against bacillus paratyphosus B, and a bacillus enteritidis (7160) obtained recently from a typical case of food poisoning. The men examined were under treatment in the Manchester military hospitals for either wounds or illness. Careful notes were taken so as to ensure that the men examined had actually been inoculated against typhoid fever within the previous year, and to exclude those who appeared to have previously suffered from typhoid or paratyphoid infection. All the data necessary to make identification of the cases possible at some future period were entered in the detailed records which have been kept in connexion with each case. The results of this part of the investigation have been summarised in short tables to which it will be necessary to add only a few explanations.

In Table I. the localities are shown where the men were inoculated, together with the numbers found negative. It is seen that negative reactions have been obtained in the case of men inoculated

TABLE I.—*Localities in which the Men examined were Inoculated.*

Country of inoculation.	Number.	Negative.	Country of inoculation.	Number.	Negative.
England	146	23	Canada	7	1
Scotland	11	2	India	13	1
Ireland	12	3	Australia and New Zealand	21	2
France...	28	6			
South Africa ...	1	0	Two or more different countries ...	20	5
Mediterranean—					
Malta	4	2	Place unknown	3	1
Egypt	13	0			
Cyprus	1	0	Totals ...	280	46

in practically all parts of the world. With regard to Egypt, one of the men included in the list of those inoculated in different countries had been inoculated once in Bury 10 months, and again at Cairo 8 months, before examination. His blood gave a negative reaction. Another, not included in this list, had been inoculated once in Cairo 14 months previously.

Detailed examination of results obtained with the B. typhosus.—In Table II. the 280 cases are grouped according to intensity of reaction, and the individual differences in intensity are very marked.

TABLE II.—*Intensity of the Agglutination Reaction.*

—	Very strong reaction.	Strong reaction.	Moderate reaction.	Slight or doubtful.	No reaction.
Number	79	107	40	8	46
Percentage ...	28·2	38·2	14·3	2·8	16·4

Over 80 per cent. of cases gave a very definite reaction, while 16·4 per cent. gave no reaction.

Table IIIA. gives the number of men examined who had been inoculated once or twice, or oftener, and the number in whom negative reactions were

TABLE IIIA.—*Relation of Agglutination Reaction to Number of Inoculations and to Lapse of Time.*

Time between last inoculation and examination.	Inoculated once only.			Inoculated twice.			Inoculated three or four times.	
	No.	Negative.		No.	Negative.		No.	Negative.
1 month ...	5	1	20·0 %	13	0	0·0 %	1	0
2 months ...	3	0	0·0 ,,	23	3	13·0 ,,	3	0
3 ,,	8	1	12·5 ,,	21	2	9·5 ,,	1	0
4 ,,	5	0	0·0 ,,	33	4	12·1 ,,	3	0
5 ,,	4	1	25·0 ,,	21	2	9·5 ,,	1	1
6 ,,	4	0	0·0 ,,	26	5	19·2 ,,	2	0
7 ,,	12	3	25·0 ,,	22	3	13·6 ,,	3	1
8 ,,	16	4	25·0 ,,	15	2	33·0 ,,	1	1
9–12 ,,	19	8	42·0 ,,	15	4	26·6 ,,	0	0
Totals	76	18	23·7 %	189	25	13·2 %	15	3 = 20 %

found at varying intervals of time after the last inoculation. Some of the numbers are too small for accurate comparison to be drawn, but, on the whole, the following points appear from the table:—

1. A man inoculated twice has a much greater chance of developing and retaining a reaction than one inoculated only once.

2. There is a gradual diminution in the reaction as the result of the lapse of time. This is specially marked at the end of the eighth month, as is shown in Table IIIB.

TABLE IIIB.—*Influence of Lapse of Time.*

Periods (inclusive) after last inoculation.	Inoculated once.			Inoculated twice.			Inoculated 3 or 4 times.		
	No.	Negative.		No.	Negative.		No.	Negative.	
1 to 4 months ...	21	2	9·5%	90	9	10·0%	8	0	0·0%
5 ,, 8 ,, ...	36	8	22·2 ,,	84	12	14·2 ,,	7	3	42·8 ,,
9 ,, 12 ,, ...	19	8	42·1 ,,	15	4	26·6 ,,	—	—	—

3. Only one case out of 19 examined within a month of inoculation was found negative. This man had been inoculated once only in France, and his serum, though giving no reaction with the B. typhosus used, gave a marked reaction with a strain of the B. paratyphosus B. There was no history of paratyphoid infection. If this case be excluded, all those examined within a month of inoculation gave a reaction.

4. It appears that after the end of the first month the reaction is liable to disappear rapidly.

It may be added here that 7 men were examined who had not been inoculated within a year. Three, who had been inoculated from 12 to 18 months previously, were negative; 3 others, inoculated once each, 14, 24, and 45 months previously respectively, gave strong reactions. One man, inoculated 5 years before, gave a slight reaction. This suggests that individual peculiarity may have an effect deserving consideration.

TABLE IV.—*Relation of Agglutination Reaction to Intensity of Post-inoculation Symptoms.*

Reaction to inoculation.			Agglutination reaction.			
			Positive.	Negative.	Positive.	Negative.
Symptoms slight or not noticeable ...	113	40·3 %	96	17	85·0%	15·0%
Well-marked symptoms ...	167	59·7 ,,	138	29	82·6 ,,	17·4 ,,
Totals	280	—	234	46	—	—

Table IV. shows the relation of the reaction to the intensity of the post-inoculation symptoms. The men's own testimony was all that could be got in taking the history of the symptoms, and individual ideas of severity and slightness often vary considerably. Also these symptoms depend on outside factors—rest or exercise following inoculation, &c. Careful inquiries were, however, directed to particular points—local symptoms, headache, shivering, vomiting, rest in bed, &c.—so that in the mass of a fair number of cases a good indication has probably been gained. The majority of men, whether giving positive or negative reactions, had somewhat marked symptoms following inoculation. No reliance can be placed upon the symptoms following inoculation as an index of the serum reaction which is likely to result in any particular case.

Relation of reaction to possible variations in the vaccines used for inoculation.—An attempt was made to test this possibility by taking the cases giving a negative reaction and making a note of the places and dates of inoculation. Each case was then compared, if possible, with that of a man giving a good reaction who had received a similar number of injections at the same place and at

about the same time. It was possible to control in this way the results obtained in connexion with 25 out of the 46 men who gave negative reactions.

B. paratyphosus.—274 cases were tested against a strain of B. paratyphosus B. This bacillus was not very satisfactory, as it was slightly acted upon by normal sera. In 9 cases a definitely stronger reaction than with normal serum was obtained.

B. enteritidis.—272 cases were tested against a well-authenticated and satisfactory strain of this organism. Three sera gave moderate reactions, and 4 others slight ones. This proportion is somewhat greater than that obtained by Dr. G. D. Dawson in a series of tests in which the same strain of B. enteritidis was used.[1] The difference is probably due to the fact that Dr. Dawson used a higher dilution than that adopted in this investigation.

BRAIN LIPOID AS A HÆMOSTATIC.

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(From the Department of Pharmacology, University of Minnesota.)

HOWELL has shown that the so-called fibrin ferment is not a true ferment at all, but a lipoid substance which seems identical with the diphosphatide *kephalin*, first isolated from the brain by Thudichum. Since Fonio, on the staff of Kocher, and others have shown the wide usefulness of local applications of fibrin ferment (coagulen) as a hæmostatic in rhinological, gynæcological, and surgical conditions, and A. F. Hess has found that tissue extracts which are rich in thrombin (especially brain and liver extracts) injected subcutaneously are of great value in the treatment of hæmorrhagic conditions in children, it seemed of interest to determine whether a similar usefulness might be found for lipoids derived from the brain. Fonio's coagulen is derived from the layer of centrifugalised blood which contains the platelets and is therefore present in relatively small quantities. The kephalins, on the other hand, are present in relatively large quantities in brain tissue. They are only slightly soluble in cold alcohol, but readily soluble in ether. For the purposes of military surgery it is important to obtain an active substance by the simplest possible method, and the following procedure was resorted to in the experiments to be reported.

Ox brain was covered with three volumes of alcohol, shaken up two or three times, and the excess of alcohol then poured off and squeezed out gently through linen, care being taken to avoid great force in wringing out the alcohol, as this tends to break up the brain tissue into very finely divided particles which pass through the filter. The residue is then covered with three volumes of ether, shaken vigorously, and filtered first through cotton and then through filter-paper. The clear filtrate thus obtained is evaporated to dryness over a water bath and a yellow residue remains. This residue consists largely of kephalin, but though the latter is not in the pure state it is extremely active in accelerating the clotting of blood *in vitro*.

In our experiments it was first used for stopping hæmorrhage from the vessels of the skull and dura of the rabbit in a class experiment in which the action of drugs on the exposed pial vessels was being tested. It was found that when a trace of lipoid was smeared over an oozing surface of bone and a gauze sponge held for compression for one half minute to two minutes, the oozing of blood ceased much more rapidly than it did in corresponding areas where no lipoid was applied. Equally satisfactory results were obtained upon rabbits' jaws, from which the entire teeth and alveolar processes were extracted. The lipoid accelerated clotting and left the denuded surface of the bone as a clean surface with a thin layer of glistening fibrin.

When the lipoid is applied to a region traversed by an eroded artery of medium size, however, the cessation of bleeding is not nearly as striking as when the lipoid is applied to surfaces of oozing from capillaries, because the force of the blood pressure in the artery pushes the clot away before it has time to become firm and adhere. When, however, the bleeding occurs in a pit or trough between tissues, so that the blood can form a little pool, the result is quite different. The fibrin ferment action of the lipoid becomes manifest in from one to two minutes, and in normal mammals the entire mass of blood becomes transformed into a clot which is decidedly firmer than that which sets in spontaneously, and the resistance which this firmer clot offers to the blood stream hastens hæmostasis.

This was quite strikingly shown in an experiment in which both femoral arteries of a dog were exposed to Scarpa's triangle and cut through as nearly simultaneously as possible. In order to measure the amount of bleeding from each vessel the blood emerging from it was siphoned off into a graduated cylinder connected with a suction pump while the blood from the other artery was siphoned into a corresponding graduated cylinder similarly arranged. The artery in which the lipoid was tested was smeared with a little of the lipoid before its walls were cut through, and a little of the lipoid on a piece of wire was transferred to the pool of blood that formed in Scarpa's triangle after the incision and stirred around once so as to bring it into intimate contact with all the blood in the pool. Clotting occurred much more rapidly on the treated than on the control side, and a very firm clot was found to have formed there in less than two minutes, while the formation of a clot on the control side required five minutes, and the clot which formed there was much less firm in its consistency. Moreover, the amount of blood that could be siphoned off from Scarpa's triangle during the experiment was less than 20 c.c. on the side treated with the lipoid, while on the control side more than 75 c.c. spurted out. Similar hæmostatic effects were also obtained in controlling hæmorrhage from incisions in the dog's kidney and liver, though it was always found that the bleeding continued when arteries of appreciable size were cut across. On this account the results seemed more striking in excisions of bits of the kidney than in the liver, though in the latter organ excellent results could be obtained if the larger vessels were clamped and ligated.

In an excision of the tonsils, performed by Dr. W. Murray, it was found that the very activity of the preparation might become a disadvantage in this region of the body, for upon enucleation of the tonsils the blood came with a gush from the larger arteries and formed clots in the pharynx before they could be removed by swabbing. In this condition, therefore, as in many others, the best results

[1] Brit. Med. Jour., 1915, vol. ii., p. 137.

can be obtained by smearing the lipoid upon the gauze compresses rather than upon the bleeding surface of the tissue.

The relative ease and cheapness of preparation of this brain lipoid as compared with Fonio and Kocher's coagulen renders it particularly useful for the purposes of first aid in military and emergency surgery; and it seems quite possible for soldiers off to the front might be provided with a little salve pot containing about a drachm of the substance, with a little loop of wire for smearing it on the wounded area before the application of the bandage, or else upon the bandage itself. The lipoid can easily be prepared sterilely, but there seems to be no objection to its being rendered antiseptic by the addition of a small trace of tricresol to the ether used in the preparation, in such amount that after the evaporation the lipoid should contain not more than 0·1 per cent of the tricresol.

Since the above-mentioned experiments were performed the writer has learned that an investigation of the clinical application of kephalin has been undertaken independently by Dr. S. H. Hurwitz, of the Hooper Institute, San Francisco, whose results seem to be of similar nature.

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Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF ACUTE MELANCHOLIA TREATED BY BLOOD-LETTING.

BY F. LUCAS BENHAM, M.D. LOND., M.R.C.P. LOND., M.R.C.S.

ABERNETHY remarks in one of his lectures that "you cannot do wrong in bleeding a man who is disposed to put a pistol to his head." There is a good deal of sense in this recommendation, not only for the reason that he gives—that it will "keep many a lusty man quiet"—but also, I believe, because it may tend to cure the mental disorder which produced the suicidal impulse. In meeting with a case of melancholia, especially one of rapid onset, where the brain is evidently oppressed and clouded and working with considerable friction, the practitioner's clinical instinct will suggest the employment of an efficient sedative which will enable the machine to run with more ease and less pressure. To attain this end no sedative is so ready and efficacious as a general blood-letting. Of course, such cases are speedily committed to an asylum, where they may be confined for a long time, perhaps permanently, or else, while watching and temporising, they may slip through our hands and perpetrate suicide. I have had such a disaster happen more than once, and in each case have regretted that I had not at any rate tried venesection in good time. Such a favourable case at last presented itself to me, and the following is a brief report of it.

The patient was a young man, about 25 years of age, who had come out by himself from England to see whether the change would benefit his "nervous" condition. His father is insane and has been confined in an asylum in England for some years. Since his arrival in Australia the young man had been employed regularly in good labouring work, and had been thus engaged until he consulted me about March 1st of this year. He told me that he had been getting mentally depressed and could hardly continue his work. His appearance bore this out. He was very much depressed, quiet, and mentally dull and slow. He had vague delusions of terror, slept badly, and had suicidal impulses. I gave him ordinary medicines—purgatives and bromide—but he got worse. I was afraid that he would have to go to a lunatic asylum, but I was opposed to his doing so, as this might involve a long detention, and he had no relatives or responsible friends here. I had advised him at first to return to England at once, but in the course of two or three days he became too bad to be trusted to go. The manager of one of the seamen's homes was kind enough to take charge of him for a time, boarding him and keeping a watch on him. I then determined to try the effect of venesection, and bled him (from the arm) to the extent of more than 20 ounces. The effect was very good. In the course of the day he became brighter and more cheerful, and slept better at night. I think that a repetition of the bleeding would have had still better effects; however, I contented myself with giving moderate doses of chloral and bromide and occasional purgatives. There was some little delay in obtaining for him a passage on a home-bound vessel, and he had to wait a week or ten days, and in that interval he had a slight relapse. When the time came for the ship to leave I thought it safe to let him go, notwithstanding the facilities for suicide at sea, and he went.

I have since heard that this patient has written to say that he reached England safely and well, and that he has enlisted and gone to the front. I think that this good result may be largely attributed to the venesection, and I wish that this method were more extensively, though judiciously, adopted.

Exeter, South Australia.

A CASE OF PULSUS BIGEMINUS WITH REGULAR ABSENCE OF THE AURICULAR WAVE

DUE TO OVERDOSAGE WITH DIGITALIS.

BY H. P. HACKER, M.D., B.S. LOND.,
MEDICAL OFFICER, FEDERATED MALAY STATES.

THE patient was a man, aged 38 years, who had lived a strenuous life in Burma, indulging largely in athletics and hunting. There was a vague history of an attack which might have been syphilis five years previously, and although the Wassermann reaction was negative at Singapore and in London, I have little doubt that the heart lesion was due to syphilis and aggravated by excessive athletics. The only other previous illness had been an attack of typhoid fever in 1902. During the past 18 months he had had two attacks of swelling of the feet and shortness of breath, but

had recovered quickly on laying up in bed and taking digitalis. During the last year, however, he had been always conscious of the abnormal pulsation in the neck and chest.

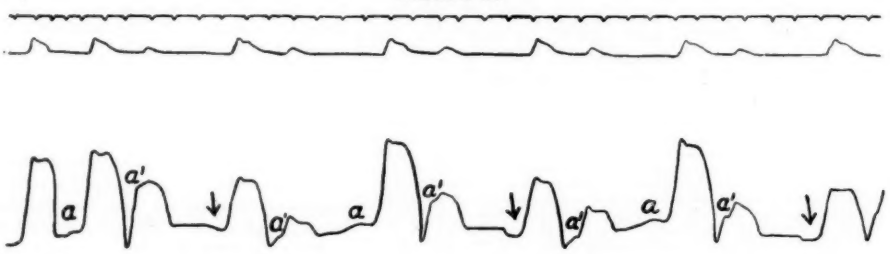
When admitted to hospital the patient was on his way home, and had been taking on his own responsibility a prescription which had done him much good during his attacks of back pressure. This medicine contained 10 minims of digitalis to the ounce, and he had been taking it three times a day for the past six weeks. As he had complete faith in the medicine, it had never occurred to him to stop it, although he was becoming steadily worse. He had with him three more bottles made up for the voyage. We stopped the medicine at once, and gave him merely saline purgatives and complete rest in bed. In five days he had completely returned to his normal regular aortic pulse, as shown in the sphygmographic tracing A. The other tracings, taken on the third day after admission, show a very typical, regular, paired beating of the heart, with the peculiarity that the auricular beat in front of each large beat is alternately present and absent. Tracing B is from the apex, and it will be seen that in front of the second smaller beat of the pair the auricular wave, marked *a*, is always present. In front of the first beat, however, the auricular beat is present and absent alternately. The presence is marked *a* and the absence by an arrow.

Tracing C shows the same phenomenon in the venous curve, a^1, c^1, v^1, belonging to the second and smaller beat of each pair. The alternate absence of *a* is again marked by an arrow.

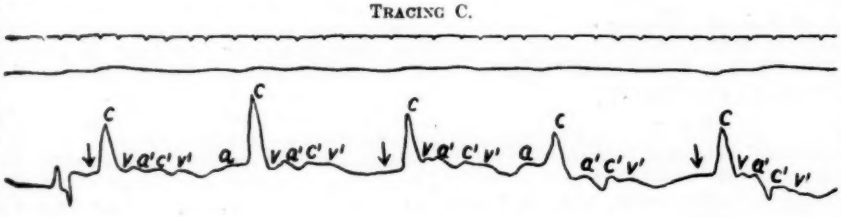
TRACING A.

Tracing D is a freak curve obtained in an attempt at getting a venous curve in the neck. It shows a peculiar, regularly recurring depression, marked *x*, preceding each alternate *C* wave. This depression occurred perfectly regularly over more than two feet of tracing, and is evidently connected with the absence of the auricular beat, but I am unable to explain it.

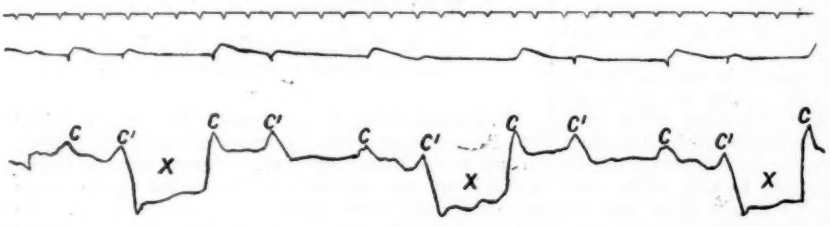
TRACING B.



TRACING C.



TRACING D.



The case is interesting in showing the danger of the popular lay idea that digitalis is a heart tonic and therefore useful in all manner of heart diseases. Here is one case in which it was distinctly harmful. The patient settled down within a week to a typical case of aortic regurgitation with a collapsing pulse, as shown in tracing A, an apex beat in the sixth space and two inches outside the nipple line, and an area over the hypothenar eminences which showed capillary pulsation without any manipulation whatever. I had a letter from him in London saying that he had arrived safely and that the medical authorities there had said that he did not need digitalis at present.

Kuala Lumpur, Federated Malay States.

Reviews and Notices of Books.

An Index of Prognosis and End-Results of Treatment.

By Various Writers. Edited by A. RENDLE SHORT, M.D. Lond., F.R.C.S. Eng., Honorary Assistant Surgeon, Bristol Royal Infirmary. Bristol: J. Wright and Sons. 1915. Pp. viii.-570. Price 21*s.* net.

THIS is undoubtedly the day of dictionaries of medicine and surgery. The publishers responsible for the production of the volume now before us have already brought out a well-known "Index of Treatment," now in its seventh edition, and an excellent "Index of Differential Diagnosis of Main Symptoms," now in its fourth reprint. The "Index of Prognosis" is issued as a companion volume to these two. Its principal aims are two: first, to set out the results of various methods of treatment in such a form as to enable the practitioner to obtain a fair, unbiassed, reasonable opinion as to the prospects of securing for his patient permanent relief, and the risks of such treatment; secondly, to furnish data by means of which, apart from the question of treatment, he may accurately forecast the future course of the patient's disease. The production of a work with these aims has naturally been very laborious. In the last resort it is to statistical returns that writers on prognosis must look in assessing the end-results of diseases and of their treatment, and the search for such statistics in the over-abundant medical and surgical literature of the day necessarily entails a vast amount of spade work.

The editor, who has written the articles dealing with the many subjects included in general surgery, and his 24 contributors to the Index are to be congratulated warmly upon the result of their labours. The articles are short and compact, clearly written, and as comprehensive in their scope as it has been practicable to make them. Wherever possible statements of fact from which the reader can draw his own conclusions are given, rather than the nebulous prophesies founded on impressions and probabilities that so often, alas, build up the prognoses that have to be made in the daily practice of medicine. There seems little room for improvement in the general design of the volume or the lines on which its separate articles are written. Possibly in future editions more use might be made of the Registrar-General's returns of mortality as evidence of the fatality of common diseases. Under the heading "Mumps," for example, it is said that "mumps is only exceptionally fatal," a statement that would gain precision by an addition to the effect that nowadays it causes well over 100 deaths per annum in England and Wales, according to the Registrar-General. Very few, if any important, diseases have been overlooked in the composition of the Index, although no room has been found, apparently, for such commonplaces as aphonia, coryza, Dupuytren's contracture, helminthiasis, lienteric diarrhœa, or for such diseases or disorders as amblyopia, fibrosis of the lung, glaucoma, iritis, and tinnitus aurium.

The book is well printed and almost free from misprints. It should be of great service to the practitioner of medicine and also to advanced medical students, to whom it may be as heartily commended as its companion volumes on "Diagnosis" and "Treatment."

The Elements of Military Hygiene, especially Arranged for Officers and Men of the Line.

By P. M. ASHBURN, Major, Medical Corps, United States Army. Second edition. Boston and New York: Houghton Mifflin Company. 1915. Pp. 351. Price $1.50 net.

IN the preface to this second edition Major Ashburn alludes to the notable increase in the interest taken by line officers in matters of hygiene and sanitation. The recruit and his environment are first treated of, including his personal hygiene, food, accommodation in barracks and camp, and the influence of climate. In the second part the causes of disease are considered, and in the third part the prevention and control of epidemics. The age limits for enlistment in the United States Army are 18 and 35 years; preferably men are chosen between 23 and 30. With regard to teeth, at least four molars are required, two above and two below, in such positions that they can be used effectively; there should also be enough front teeth to permit biting of food and to preserve the symmetry of the face. Marked varicose veins cause rejection; if the condition is slight the recruit may be passed, if otherwise desirable. Men with flat feet are also rejected unless the recruit is a desirable one and the condition never gives trouble. Under the heading of food no standard requirement is detailed, except that Chittenden's low proteid allowance appears to be adopted. The use of salads is advocated, also of "desserts," which term includes puddings and fruit pies.

For barrack accommodation a minimum of 600 cubic feet and 60 square feet of floor space is laid down, but it is not stated whether this is the authorised provision. In the tropics window screens should be provided to keep out flies and mosquitoes. If they are not provided bed nets must be used at night. It is not stated whether this is a recommendation or a regulation. Great attention is paid to cleanliness in the kitchen. Flush closets and urinals are now installed practically in all stations. For water-supply 100 gallons daily are recommended per head (equalling 83 British gallons). This is much in excess of the British army allowance of 20 gallons; it is, indeed, stated that so much (as 100 gallons) "need not ordinarily be used." If the quality is doubtful boiling is recommended, or filtration, the Darnall filter (in which suspended matters are first precipitated) for choice. In forming an opinion as to the safety of a water-supply for drinking it is laid down that consideration of the source and surroundings is of more importance than any chemical or microscopic test. For disposal of excreta incineration would be the best method, but it is considered not to be practicable in camps generally. Shallow trenching is condemned and deep trenching (6 feet or more) advocated, the drinking water-supply being now always derived from a distant and safe source. Very sound recommendations are made as to water-supply on the march, its purification, and economy in its use. The hygiene of hot and cold climates is rather shortly considered in 22 pages.

Part II. treats of the causes of disease, predisposing and exciting; amongst the latter are mentioned spirilli and ærobic bacteria. The third part is entitled "The Prevention and Control of Epidemics." Its chapters deal with infections through the alimentary and respiratory tracts, insect-borne diseases, and venereal diseases. It is unusual to call these classes of disease epidemic.

Mediterranean fever receives scant mention, and epidemiology generally is treated very cursorily.

The manual is designed for the use of officers and men of the line, and being written in plain, untechnical language is likely to be of great service for this purpose.

A Manual of Midwifery.

By THOMAS WATTS EDEN, M.D., C.M. Edin., F.R.C.P. Lond., F.R.C.S. Edin., Obstetric Physician to Charing Cross Hospital; Consulting Physician to Queen Charlotte's Hospital. Fourth edition. With 5 plates and 354 illustrations. London: J. and A. Churchill. 1915. Pp. 776. Price 16*s*.

IN the new edition this work appears on the same lines as the previous editions that are so well known to medical men who have studied the subject during the last ten years. Although the last edition appeared only three years ago, it has been found necessary to make several additions and alterations in the text. Our increased knowledge of the changes in the endocrinous glands has caused a revision of the chapter on the physiology of pregnancy. Similarly the toxæmia of pregnancy and the treatment of eclampsia have been brought up to date. New ground has been broken in an attempt to classify the different varieties of overaction of the parturient uterus, and the part played by the contraction ring in obstructing the delivery of the child is discussed for the first time.

Many of the illustrations are new, and four coloured plates have been added. The text is everywhere lucid and gives the student a clear idea of what are the most recent views on the subject. In cases where the opinions of authorities differ—as, for example, in the treatment of eclampsia—Dr. Eden clearly states that the two schools exist, gives their separate positions, and finally sums up the question in the light of his own experience. The present edition will maintain the high reputation that the work possesses.

Practical Pediatrics.

By JAMES H. MCKEE, M.D., and WILLIAM H. WELLS, M.D. With an Appendix upon Development and its Anomalies by JOHN MADISON TAYLOR, M.D. In two volumes. Illustrated. London: Henry Kimpton. 1914. Pp. 1182. Price £2 10*s*. net.

THESE somewhat ambitious volumes represent a new edition of a work on pediatrics by Dr. W. H. Wells and Dr. J. M. Taylor (Taylor and Wells), which, though perhaps less known in England than its merits deserve, has been largely read in the United States of America, and, we believe, in its translated form, in Italy also. Dr. Taylor, on his appointment to the chair of non-pharmaceutic therapeutics at Temple University, Philadelphia, unfortunately severed his partnership with Dr. Wells as joint author, but, independently of the excellent appendix on development which he has contributed, he has left his impress as therapeutist on many a page of the revised version.

The two volumes cover rather more ground than is usually the case in text-books of pediatrics, inasmuch as the prophylactic side of the subject is given a position of prominence, and Dr. Wells's experience in obstetric practice at Jefferson Medical College enables him to bring his practical knowledge of the ailments of the newborn baby to bear with greater clinical authority than is usually possible for the pure specialist in children's diseases. Two novel features of these volumes are, first, that they contain a good account of the application of the sphygmomanometer in the diagnosis of disease in children; and, secondly, that an exact interpretation of the physiological action of drugs has been made a guiding principle. In other respects the general lines of the work adhere to the somewhat conservative traditions followed by the extremely numerous army of American authors who have published text-books on the subject of pediatrics. Prominence is given to the influence of the ductless glands on development; it is, however, a little unfortunate that the two accounts given respectively in the appendix by Dr. Taylor and by the joint authors in Chapter I. are not in complete harmony, although both accounts appear to be largely inspired by the writings of Dr. C. de M. Sajous, whose views on the internal secretions have received little attention in this country. This want of unanimity is again noticeable in the two accounts of dentition which appear in the appendix and in Chapter V. In the first of these Dr. Taylor, following the teaching of Dr. E. L. Kanaga, attributes symptoms to dentition which we cannot help thinking would greatly shock Professor Jacobi, for whose opinions on many other matters Dr. Taylor expresses the most profound respect. "If," says Dr. Taylor, "vitality is lowered and the circulation enfeebled or diseased absorption of the overlying tissue does not keep pace with the development of the tooth hence the area becomes inflamed, the blood stagnates, and as a result waste products are not properly removed." He then proceeds to explain that it is not the pressure of the tooth upon the gums that causes pain, but the deep pressure of the root upon the nerves of the highly sensitive structures that lie below. Delayed dentition may, in fact, be regarded as an impaction the pressure of which on sensitive nerves is quite sufficient to explain the convulsions and other nervous symptoms which are the frequent accompaniment of dentition. If the irritation persists the nervous system becomes deranged and acts erratically. In contrast to these categorical statements in the appendix we find in the body of the text, p. 167, "we cannot recall a single case in which teething has primarily caused a convulsion." For the most part we regard the views with respect to the influence of environment on the development of the child given in the appendix as extremely rational and not least those which have reference to the influence of hypoplasia of the jaws on the general physiognomy of the individual. Hereditary hypoplasia of the jaw is a defect which, if not entirely amenable to treatment, is at least capable of correction by prophylactic mechano-therapeutics. Some very excellent illustrations are provided to show the disfiguring deformities of the lower face caused by inadequate development of both upper and lower jaw, misfortunes which can be prevented by the application of rational expedients.

In the general development of the physical and psychic sides of the child Dr. Taylor repeatedly refers to the importance of variation in the stimulus and the avoidance of monotony. "Alternations," he says, "of struggle and rest, of cold and heat, of hunger and depletion evolve vigor, stamina, and efficiency." Nothing can be more admirable than the regimen he prescribes for the physiological development of the lungs, the heart, the skin, and other organic systems. His suggestion, however,

that annointing the skin with oil is a more rational method of cleaning it than washing it with soap is less likely to be put into extensive practice than to be accepted as an expression of academic hygiene. The author's experience of the use of thyroid gland in the treatment of that peculiarly intractable disease hæmophilia will be noted with interest. In the very excellent chapter devoted to consideration of infant-feeding the importance of the personal equation and individual treatment is kept ever in the forefront. We notice that Finkelstein's classification of the dyspepsias is not adopted, and that comparatively little attention is paid to disturbance due to faulty metabolism and acidosis, and in this connexion we must dissent from the view that cyclic vomiting can be distinguished from vomiting due to gastritis by its strictly limited duration. Cyclic vomiting can be most persistent, and, on the other hand, gastritis, as indeed is most familiar in the case of acute gastritis of alcoholic origin, extremely evanescent. Where there is so much to praise we may be forgiven if we refer to what we consider very faulty instructions on p. 136 for pancreatising milk. If peptonisation has as its object the hydrolysis of the elements contained in milk we would point out that to artificially digest for ten minutes only cannot materially effect this purpose.

Were it not that the price of these two volumes is very high we believe that their many excellent qualities would ensure a large following of readers in this country.

MISCELLANEOUS VOLUMES.

WE notice briefly in this column a selection of books on chemistry in relation to foods, sewage, hygiene, and sanitation generally.

Mr. G. BERTRAM KERSHAW'S book, *Sewage Purification and Disposal*, issued as one of the Cambridge Public Health Series (Cambridge: At the University Press. 1915. Pp. 340. Price 12*s.* net), presents a very interesting and clear account of the history and position of this great sanitary problem. As engineer to the Royal Commission on Sewage Disposal, the writer has come into possession of a wealth of facts and, we dare say, theories too. He has recently done good service in connexion with this question by compiling a *Guide to the Reports of the Royal Commission on Sewage Disposal* (London: P. S. King and Son, Limited. 1915. Pp. 178. Price 5*s.* net). This will prove a valuable work of reference to all sanitary authorities, as by the plan followed extracts are given from each report and appendices with all the headings and subheadings, thus giving in condensed form the subject matter contained in them. The editors of the Cambridge Public Health Series have made a wise choice in securing Mr. Kershaw as the author of a work on the subject of sewage purification and disposal in their general bearings. His book tells us how things stand and sums up the merits and demerits of the processes under consideration at the present time. It is to be hoped that after the immense work done by the Royal Commission on Sewage Disposal some solidarity of procedure may be arrived at. Mr. Kershaw's contributions on the subject help materially to show the directions in which such a consummation may come.—Another useful addition to the Cambridge Public Health Series is *The Chemical Examination of Water, Sewage, Foods, and other Substances*, by J. E. PURVIS, M.A., and T. R. HODGSON, M.A. (Cambridge: At the University Press. Pp. 228. Price 9*s.* net). Primarily written for those attending a course of instruction for diplomas and degrees in public health, it will also be found a convenient source of reference in general laboratory practice. In regard to their reference to THE LANCET method of estimating the active oils in coal tar disinfectants in which strong baryta solution is used, we may point out that we have found since publishing this process that it is more convenient to substitute for baryta a mixture of calcium chloride and caustic soda in equivalent quantities, adding the calcium chloride first. The section on water is a good practical contribution, and that on sewage contains references to the authors' valuable investigation on the subject. The book will be a useful laboratory guide to the student of public health matters. The last chapter gives the Local Government Board test for chlorine in rag-flock. It has been stated that this test has been rendered fallacious by a rapid process of washing adopted by some manufacturers which removes chlorine, but not dirt or other offensive matters. If this is so the object of the Act is defeated in some ways.—In *Air, Water, and Food*, by ALPHEUS G. WOODMAN and JOHN F. NORTON (London: Chapman and Hall, Limited; New York: John Wiley and Sons. Fourth edition. Pp. 248. Price 8*s.* 6*d.* net), the modern analytical essentials involved in the examination of air, water, and food are clearly set out. The previous edition (the third) was issued in 1909, and since that time not only have analytical methods advanced, but interpretations have been altered. A particular case in point appears in our new views as to the bearing of the chemistry of air upon health. The trend of thought now appears to be that the physics of the air rather than its chemistry determine whether it is conducive or not to a comfortable state of the body. These authors regard the subject as "still in a somewhat transitory state." The analytical methods are clearly described, and are fully in accordance with modern advances, which, of course, have the same force in this country as in the United States. There are some points, however, which are confined to the particular administrative measures of the latter country. This does not detract from the value of the purely analytical side of the work. The paragraphs on the detection of preservatives are particularly good.

By "temperance," in a series of experimental lessons in a book having for its title *Lessons and Experiments on Scientific Hygiene and Temperance for Elementary School Children*, by HELEN COOMBER (London: Macmillan and Co., Limited. Pp. 163. Price 1*s.* net), is meant, of course, the rejection of alcohol from the dietary. In the early sections the function of food and the fate of food in the body are explained in simple terms. These lead up to elementary studies of the effect of alcohol on cell growth, digestion, circulation, nervous system, and so forth, until the last chapter is reached on Alcohol as a Deceiver. Whatever the views taken may be, temperate or intemperate, on this subject, the book is certainly likely to do good and no harm, and the author has evidently taken great pains to keep her language within "the extremely narrow vocabulary of the children" by the method of question and answer. Even so, we think, she has found difficulties. Protoplasm is an awkward word for children, and a description of its function between brain and muscle has introduced some equally awkward technical terms. There is a slip, but an unimportant one, in the opening line of Section V., in which it is stated that human beings breathe out "carbon oxide gas."

JOURNALS.

The Journal of Physiology. Edited by J. N. LANGLEY, Sc.D., F.R.S. Vol. XLIX., No. 5. Cambridge University Press. 1915. Pp. 301–440. Price 9*s.*—The Mode of Action of Carbon Dioxide on the Blood-pressure, by E. P. Cathcart and G. H. Clark. It is known that deep anæsthesia effectively inhibits the mechanism which normally causes a rise in the blood pressure on the administration of small doses of CO_2 (4 litres of 12 per cent. in the air). The inhibitory influence of the anæsthetic seems to be due to its action on a central synapse. The authors, using intact and decapitated animals, confirm this view. During deep anæsthesia there is a marked fall in blood pressure, a fall which in its magnitude is similar to that occurring after decapitation. It is shown that CO_2 in the intact animal produces a rise in blood pressure, but in a similar animal treated with nicotine there is no rise in blood pressure. In the decapitated animal CO_2 produces no rise of blood pressure. The authors come to the conclusion that the action of CO_2 upon the suprarenals and blood pressure is exerted through the agency of some central mechanism.—The Influence of Veratrin Poisoning on the Electrogram of Frogs' Hearts, by S. de Boer. This paper will be of special interest to physiologists. A careful analysis of previous work is given under the head of "theoretical conclusions."—Observations on Reflex Responses to Single Break-shocks, by C. S. Sherrington and S. C. M. Sowton.

In a mammalian spinal preparation a single induction shock, even when weak, applied to a suitable nerve evokes with regularity a reflex contraction in an appropriately chosen muscle. Such brief stimulus and response can serve as a test reaction for the condition of a reflex arc. In some experiments a decapitated animal was used, in other experiments the deep anæsthetised animal (cat) was decerebrated—the cerebrum and mid-brain being removed and the spinal cord severed at the tenth thoracic level. In recording, the muscle chosen for some observations was the tensor fasciæ femoris, for others tibialis anticus. In the former case the afferent nerve employed was the peroneal, in the latter the popliteal. The authors compare the break-shock reflex contraction with the twitch contraction evoked by the same stimulus applied direct to the motor nerve of the muscle. All other muscles, except any attached to the myograph, were put out of action by nerve section or resection of their attachments and break-shocks were used as stimuli—the break key being opened by the swing of a pendulum or by a rotating wheel. It was found: 1. That in the mammalian spinal preparation the single break-shock reflex of a flexor arc has a threshold sometimes very little higher than that of the peripheral nerve-muscle preparation, though sometimes very greatly higher. 2. With varied strength of break-shock the range of contraction-height of the spinal reflex extends over a much wider stretch of the inductorium scale than does that of the peripheral nerve-muscle preparation similarly tested. 3. The single break-shock reflex can much exceed in height the maximal contraction excitable by a single break-shock from the nerve-muscle preparation itself. 4. Stair-casing was much more marked with peripheral nerve-muscle preparation than with the reflex. 5. Observations by the summed contraction method of the duration of the refractory phase in the mammalian peripheral nerve-muscle found that it measures at temperatures a few degrees below blood temperature between $0{\cdot}5\sigma$ and $0{\cdot}7\sigma$—e.g., at 33° C. in the exposed part of the nerve trunk $0{\cdot}65\sigma$. As tested by two break-shocks it would appear that the refractory phase of the reflex arc is nowhere of a greatly different order than that of the motor nerve-muscle preparation itself. 6. The single break-shock reflex is a delicate test for the state of responsiveness of the spinal reflex arc.—The Eosinophil Cell of Teleostean Fish, by Alan N. Drury.—On Pituitary Secretion, by Douglas Cow. There are two main views with regard to the place of formation of the active principle (or principles) of the pituitary body: (1) It is supposed that it is formed in the posterior lobe of the gland, a view which rests chiefly on the fact that extracts of the posterior lobe have far greater physiological activity than extracts of the anterior lobe; and (2) it is supposed to be formed in the anterior lobe and to pass back into the posterior lobe and so to the cerebro-spinal fluid. This view is based chiefly on histological grounds. The author tested the effects of extracts of duodenal mucous membrane on the pituitary body of cats, rabbits, and dogs by perfusion, intravenous or subcutaneous injections, injection of Indian ink or gelatine-carmine into the fourth ventricle, and concludes from his recorded experiments that (1) certain definite channels of communication exist (in the cat, at any rate) between the ventricular cavity in the infundibular stalk and spaces in the anterior lobe of the pituitary; (2) under certain conditions an active principle (or principles) is demonstrable in the cerebro-spinal fluid, which principle fulfils every test for pituitary active principle that has been applied; and (3) the products of activity of the pituitary body are secreted into the cerebro-spinal fluid.—The Effect of Various Mechanical Conditions on the Gaseous Metabolism and Efficiency of the Mammalian Heart, by C. Lovatt Evans and Y. Matsuoka. The heart-lung preparation of the dog was used much as described in previous experiments. The authors give an account of the manner in which they calculated the work of the heart, and in doing so they point out that the velocity factor must be allowed for when the output is high, as it may be more than 5 per cent. of the total work. When the arterial pressure is raised the gaseous metabolism is increased, while the mechanical efficiency of the heart is thereby raised to a certain limit, beyond which it diminishes again. When the output of the heart is increased the gaseous metabolism is markedly increased up to a certain maximum, falling off again with further increase of output. Increase of output is more economically performed than a comparable increase of pressure. The maximal mechanical efficiency is about 20 per cent. and is obtained by moderate increase of both output and pressure. Fatigue phenomena are seen in a lower efficiency accompanying cardiac dilatation. There is usually demonstrable a parallel between the oxygen usage of the heart and the heart volume—i.e., the length of the cardiac fibres—just as there is a close parallel between cardiac work and volume. Usually the venous pressure also runs parallel to the oxygen usage, but this is not always the case. The most striking exception to this is seen in the effect of removal of the pericardium when the heart is doing considerable work, for volume and oxygen usage increase, and venous pressure diminishes. When the heart fails—under the above experimental conditions—it does so usually because, in spite of high expenditure, it is unable to perform the excessive work offered it. But it may fail from the exhaustion—i.e., a lowering of its metabolism; a phenomenon of such failure is that it commences by a retardation in the pulse-rate. As to the oxygen requirements of the human heart, this has been often estimated on rather insufficient data as about 4 or 5 per cent. of that of the whole body at rest. The oxygen usage of the heart of the dog was found to be as a mean 3·24 c.c. per gramme per hour. Taking the weight of the human heart as 200 grammes, and assuming its gramme per hour metabolism to be the same as in the dog, the human heart should use 10·5 c.c. oxygen per minute under conditions of rest. This amount is about 3 per cent. of 350 c.c., which may be taken as a fair average for the minute oxygen usage of the whole body. Under conditions of exercise the oxygen usage of the heart may be increased at least three times—i.e., it may easily reach 30 c.c. per minute in man.—The Physiological Action of Physostigmine and its Action on Denervated Skeletal Muscle, by J. N. Langley and Toyojiro Kato. This is a very elaborate and important paper, and one of special interest to pharmacologists. The summary of the results alone occupies two and a half pages, and those specially interested should read the paper in the original. The authors conclude that "whilst the balance of evidence is now in favour of physostigmine having an action both on the neural region of the muscle causing tonic contraction, and on the nerve endings causing twitching, there are in our view some points still to be settled before the action on nerve endings can be considered to be definitely proved."—The Rate of Loss of Weight in Skeletal Muscle after Nerve Section, with Some Observations on the Effect of Stimulation and other Treatment, by J. N. Langley and Toyojiro Kato. This paper is the natural sequence to its immediate precursor, as the denervated muscles offered an opportunity of noting the effect of nerve section on the weight of the muscle. In all cases but one the internal popliteal (tibial) nerve was cut, and the gastrocnemius, soleus, and plantaris muscles with their tendons were weighed after death. The experiments were made on growing rabbits and the weight of the denervated and the normal muscle of the opposite side compared. In cases of long duration the loss of weight was not wholly due to loss of substance, but in part to absence of growth. The above-named group of muscles begin to lose weight in about three days and then lose it rapidly, so that by the end of the second week the loss is nearly 30 per cent.; the rate of loss then decreases, but at the end of five weeks is nearly 50 per cent. No doubt the rate varies under different nutritive conditions and degrees of exercise. The fact that denervated muscle is in a state of continuous fibrillation (rabbit) make it *a priori* an open question whether the future activity caused by electrical stimulation will be beneficial or no. Some experiments on the effects of electrical and other treatment tend to show that electrical stimulation with condenser shocks delay the atrophy, that rhythmical extension of the muscle has a similar but less effect, and that gentle massage for a like time has little if any effect. The stimulation did not prevent the fibrillation nor the sluggish contraction characteristic of denervated muscle. Stimulation of a denervated muscle through the skin causes the superficial fibres only to contract unless strong currents are used. In certain cases it may be an advantage to pass one or more platinum wires through the muscle to stimulate the deeper fibres. Obviously it is a matter of practical importance to determine the best means of delaying muscular atrophy, since the better the condition of the muscle the quicker will be complete restoration of voluntary control after motor nerves have been severed. The subject is well worthy of a comprehensive investigation.

Public Health.

REPORTS OF SCHOOL MEDICAL OFFICERS.

AN examination of the reports on Medical Inspection of School Children during 1914 at six of the largest and most progressive centres of population in the kingdom affords an opportunity for some generalisations on the conditions of health that prevail, and of the benefits likely to result from this important branch of public health administration. Liverpool, Manchester, Leeds, Hull, Newcastle, and Nottingham have a combined population of nearly 3,000,000. The number of children examined in the groups specified—namely, entrants on school life, leavers, and (in some schools) those of 8 to 9 years of age—amounts to 116,272. These are not specially selected in any way, but are the whole body of scholars, of the ages specified, present in the schools. The three conditions most commonly needing attention, and the proper and timely treatment of which is likely to be of the greatest benefit from the public health point of view, are defective eyesight, decayed teeth, and abnormal conditions of the throat and nose.

In Liverpool 24 per cent. of the children about to leave school were found to have defective eyesight (i.e., a defect amounting at the least to ability to read, with each eye, type at 6 metres which is normally read at 12 metres, or V=6/12, but inability to read smaller type at this distance). In Manchester 9·4 per cent. of children about to leave were found to need glasses. At Leeds the proportion of school children (about to leave school) returned as suffering from defective vision is stated as 46·4 per cent. At Hull the proportions of children at 12 years of age, with visual acuity less than 6/9, are given as 15 and 17 per cent. for right and left eyes respectively, whilst at 13 years the percentages stated are 4·96 and 5·69, presumably because glasses had been supplied to many of these older children. At Newcastle the defective vision in leavers amounted to 15·18 per cent. in boys, and 18·68 per cent. in girls; but this does not include children with half the normal acuity (V = 6/12), only those whose vision was 6/18 or less. At Nottingham, among the leavers, 17·7 per cent. boys and 21·1 per cent. girls had defective sight (6/12 or worse).

In regard to teeth, at Liverpool, of the infant entrants, 32 per cent. had perfect teeth and 20 per cent. had four or more decayed; in the leavers these proportions were 23 and 17 per cent. respectively. At Manchester 29 per cent. of the entrants had perfect teeth and 37 per cent. had four or more decayed; in the leavers the proportions were 20 and 32·75. At Leeds 27·8 per cent. among the entrants had sound teeth and 30·5 per cent. had four or more decayed; the leavers had 25 and 19·5 per cent. respectively. At Hull 23·75 per cent. of the entrants and 30·42 per cent. of the leavers had 3 or more decayed. At Newcastle, 20·9 per cent. of the entrants had perfect teeth and 19·8 per cent. had 4 or more decayed, while in the leavers these proportions were 15·8 and 14·4 respectively. At Nottingham the proportions among entrants were 33·5 per cent. with sound teeth, and 36·4 with 4 or more decayed; among leavers, 26·5 and 26·8 per cent. respectively.

Marked enlargement of the tonsils was found to be present in 5·8 per cent. of the entrants at Liverpool, and in 2·8 per cent. adenoids were decidedly present; among leavers the proportions were practically the same. At Manchester, considerably enlarged tonsils were found in 2·5 per cent. of entrants and 2·67 per cent. of leavers; marked adenoids were present in 298 cases (that is, 2 per cent.) among entrants, and in 189 cases (that is, 1·29 per cent.) among leavers. At Leeds markedly enlarged tonsils were found in 3·7 per cent. of entrants and marked adenoids in 2·6 per cent.; among leavers the proportions were 3·5 and 1·7 per cent. respectively. Out of 1033 nose and throat cases recommended for treatment, 886 were treated; of these, 399 were cured and 83 improved, 404 being described as "unchanged." If no marked improvement resulted in 45 per cent. of cases treated, as a general rule it would be difficult to urge the necessity for this operation on the unwilling parent. At Hull the proportions of children suffering from enlarged tonsils, or adenoids, or both, were 33·4 per cent. among entrants, 34·7 among 12-year olds, and 14·8 among those of 13 years and over. At Newcastle 3·7 per cent. of the entrants had definite enlargement of the tonsils and 4·4 per cent. marked adenoids; in the leavers these proportions were respectively 7·0 and 6·1 per cent. At Nottingham the entrants showed markedly enlarged tonsils in 9·74 per cent. and marked adenoids in 2·23 per cent.; among the leavers these proportions were 6·3 and 0·97.

The eight counties of Chester, Durham, Gloucester, Northampton, Derby, Warwick, Shropshire, and West Suffolk have also issued the reports of their school medical officers. The number of children examined in the groups of entrants and leavers was 103,784. In the leaver group the percentage of children having normal vision was 86·9 in West Suffolk and 85 in Gloucester; in Derbyshire only 49·7 per cent. of these children possessed normal vision. Most authorities regard the presence of four carious teeth as the amount of defect that requires to be treated, according to the Board of Education schedule. Some 20 to 30 per cent. of leavers are generally found to need attention. In Shropshire as many as 65·7 per cent. had four or more decayed. Enlargement of the tonsils to a marked extent was observed in 5·6 per cent. of the Durham leavers, and in 4·4 per cent. of those in Shropshire; in West Suffolk only 0·5 per cent. showed this defect. Marked adenoids were diagnosed in 5 per cent. of the Durham leavers and in 3 per cent. of those in Cheshire; on the other hand, Northampton had only 0·11 and Gloucester 0·23 per cent. of such cases.

Tuberculosis and organic heart disease may be regarded as two conditions which it is of the greatest importance to discover, if present, during child life. Pulmonary tuberculosis, proved or suspected, was diagnosed in 0·17 per cent. of the children in Liverpool and in 1·23 per cent. of those in Manchester. At Hull the percentage was even 1·80—that is, more than ten times the amount in Liverpool. The difference is enormous, due to the larger proportion of cases returned as "suspected." In the counties, Warwick has 0·08 per cent. pulmonary cases and 0·08 per cent. non pulmonary; but Salop has 1·68 per cent. pulmonary cases, besides 0·25 per cent. non-pulmonary—that is 20 times the amount in the neighbouring county o, Warwick. Organic disease of the heart was found to exis in 1·56 per cent. of the children examined at Hull and in 1·86 per cent. in Gloucestershire. In no other of these towns or counties were there more than 1 per cent. affected of the whole body of children examined as entrants and leavers; but in Durham county the leavers had 1·2 per cent., in Salop there were 1·06, and in Derbyshire 1·21 per cent. of these elder children so suffering. At Hull the leaver percentage was 2·86, and in Gloucestershire 2·19. Of the 273 children found to be affected at Hull, the boys numbered 75 (0·86 per cent.) and the girls 198 (2·26 per cent.); 49 of these children on subsequent examination showed no sign of heart disease. There is a popular idea that "growing pains" and St. Vitus's dance are trivial childish complaints, and Dr. E. J. H. Fraser gives a word of warning "that they may be laying the foundation of extremely serious after-conditions"; he means, of course, that they are signs of a morbid condition that may develop into serious illness.

The average heights of 12-year-old boys in these towns vary between 133 cm. (52·5 in.) at Hull and 137 cm. (54 in.) at Nottingham; the heights of girls at the same age vary between 136·5 cm. (also at Hull) and 138 cm. (54·4 in.) also at Nottingham. In the counties the figures are somewhat higher, the Gloucester boys averaging 140·7 cm. and the Northampton boys in rural areas 142·3 cm. (55·5 in.), whilst the lowest average figure (Durham) is 137·3 cm. The girls vary between 136·1 in West Suffolk and 142·9 in rural Northampton. The average weights of the 12-year-old town boys vary between 29·8 kilos. (65·5 lb.) at Hull and 32·13 kilos. (70·8 lb.) at Nottingham; of girls of the same age, between 30·73 kilos. (67·6 lb.) at Hull and 32·12 kilos. (70·8 lb.) at Nottingham. In the counties the lowest average for 12-year-old boys is 31·9 kilos. (70·2 lb.) in Durham, and the highest 34 kilos. (74·8 lb.) in rural Northampton. The 12-year-old girls vary between 33·6 kilos. (73·9 lb.) in Durham and 34·6 kilos. (76·1 lb.) in rural Northampton.

The importance of securing the attendance of the parent at the medical inspection is alluded to by several inspectors, also the increasing interest that is being taken by parents, who now appreciate in most cases the good that results. The value of a female sanitary assistant in visiting the children's homes is borne witness to at Liverpool, and the record established of treatment being obtained in 98·96 per cent. of cases that were visited by the school nurses at Hull.

VITAL STATISTICS.

VITAL STATISTICS OF LONDON DURING JULY, 1915.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the 10 diseases specified in the table was equal to an annual rate of 6·9 per 1000 of the population, estimated at 4,516,612 persons; in the three preceding months the rates were 6·3, 6·4, and 6·7 per 1000. The lowest rates last month were recorded in Kensington, Chelsea, St. Marylebone, Hampstead, Bermondsey, and Lewisham; and the highest rates in Hackney, Finsbury, Shoreditch, Bethnal Green, Stepney, and Poplar. The prevalence of scarlet fever showed a very slight decline from that recorded in the preceding month; among the metropolitan boroughs this disease was proportionally most prevalent in Hackney, Finsbury, Shoreditch, Bethnal Green, and Stepney. The Metropolitan Asylums Hospitals contained 2400 scarlet fever patients at the end of the month, against 2339, 2221, and 2411 at the end of the three preceding months; the weekly admissions averaged 307, against 272, 283, and 326 in the three preceding months. Diphtheria was rather more prevalent than it had been in other recent months; among the metropolitan boroughs the greatest proportional prevalence of this disease was recorded in Bethnal Green, Stepney, Poplar, Southwark, and Battersea. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 1223, 1083, and 1019 at the end of the three preceding months, had risen again to 1078 at the end of the month; the weekly admissions averaged 147, against 136, 128, and 133 in the three preceding months. The prevalence of enteric fever showed a further rise; this disease was proportionally most prevalent in the City of Westminster, Hampstead, St. Pancras, Lambeth, Wandsworth, and Camberwell. The Metropolitan Asylums Hospitals contained 54 enteric fever patients at the end of the month, against 49 and 56 at the end of the two preceding months; the weekly admissions averaged 9, against 6 and 10 in the two preceding months. Erysipelas was proportionally most prevalent in Holborn, Shoreditch, Southwark, Greenwich, and Woolwich. The 16 cases of puerperal fever notified during the month included 3 in Lambeth and 2 each in Paddington, Kensington, Fulham, Southwark, and Camberwell. The 54 cases of cerebro-spinal meningitis included 7 in Islington, 7 in Lambeth, 5 in St. Pancras, 4 in Shoreditch, 4 in Wandsworth, 3 in Fulham, and 3 in Lewisham. Of the 6 cases of poliomyelitis, 2 belonged to Bethnal Green, and 1 each to Poplar, Battersea, Wandsworth, and Deptford.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex and age constitution of the populations of the several boroughs. During the four weeks ending July 31st, the deaths of 3860 London residents were registered, equal to an annual rate of 11·1 per 1000; in the three preceding months the rates were 19·6, 14·6, and 12·2 per 1000. The death-rates ranged from 6·7 in Hampstead, 7·7 in Wandsworth, 7·8 in Lewisham, 8·7 in Camberwell, and 9·1 in Stoke Newington, to 13·4 in Holborn, 13·5 in Bermondsey, 15·1 in Southwark and in Greenwich, 16·2 in Finsbury, and 16·7 in the City of London. The 3860 deaths from all causes included 306 which were referred to the principal infectious diseases; of these 68 were attributed to measles, 24 to scarlet fever, 43 to diphtheria, 60 to whooping-cough, 16 to enteric fever, and 95 to diarrhœa and enteritis among children under 2 years of age. The lowest death-rates from these diseases were recorded in Kensington, the City of Westminster, Hampstead, Lewisham, and Woolwich; and the highest rates in St. Marylebone, Finsbury, Shoreditch, Stepney, and Greenwich. The 68 deaths from measles were 41 below the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal in Finsbury, Shoreditch, Stepney, Poplar, Bermondsey, and Greenwich. The 24 fatal cases of scarlet fever were 8 in excess of the corrected average, and included 4 in Islington, 3 in Fulham, 3 in Finsbury, and 2 each in St. Marylebone, St. Pancras, Bethnal Green, and Deptford. The 43 deaths from diphtheria showed an increase of 10 over the corrected average; the greatest proportional mortality from this disease was recorded in Islington, Shoreditch, Bethnal Green, Stepney, and Greenwich. The 60 deaths from whooping-cough were 1 above the corrected average; this disease was proportionally most fatal in Finsbury, Poplar, Battersea, Deptford, and Greenwich. The 16 fatal cases of enteric fever were 8 in excess of the corrected average, and included 4 in Lambeth, 2 in Battersea, and 2 in Wandsworth. The mortality from diarrhœa and enteritis among children under 2 years of age was proportionally greatest in St. Marylebone, Finsbury, Shoreditch, Stepney, and Bermondsey. In conclusion, it may be stated that the aggregate mortality in London during the month from the principal infectious diseases, excluding diarrhœa, was 6·2 per cent. below the average.

HEALTH OF ENGLISH TOWNS.

In the 96 largest English and Welsh towns with populations exceeding 50,000 persons at the last Census, 7925 births and 3979 deaths were registered during the week ended Saturday, August 21st. The annual rate of mortality in these towns, which had been 11·4, 11·3, and 11·5 per 1000 in the three preceding weeks, fell in the week under notice to 11·4 per 1000 of their aggregate population, estimated at 18,136,180 persons at the middle of last year. During the first seven weeks of the current quarter the mean annual death-rate in these towns averaged 11·4, against 11·2 per 1000 in London. The death-rate in the week under notice ranged from 4·7 in Hornsey, 5·2 in Hastings, 6·1 in Coventry, 6·4 in East Ham and in Swansea, and 6·6 in Gillingham, to 17·0 in Liverpool, 19·7 in South Shields, 19·9 in Wigan, 22·3 in Gateshead, and 23·2 in Barnsley.

The 3979 deaths from all causes were 7 fewer than the number in the previous week, and included 529 which were referred to the principal epidemic diseases, against numbers increasing from 346 to 441 in the three preceding weeks. Of these 529 deaths, 348 resulted from infantile diarrhœal diseases, 72 from measles, 46 from diphtheria, 40 from whooping-cough, 14 from scarlet fever, and 9 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·5, or 0·2 per 1000 higher than in the previous week. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had steadily increased from 67 to 262 in the seven preceding weeks, further rose to 348, of which 85 were registered in London, 39 in Liverpool, 22 in Birmingham, 17 in Manchester, 15 each in Sheffield and Hull, and 13 in Leeds. The deaths referred to measles, which had been 71, 70, and 86 in the three preceding weeks, fell to 72 in the week under notice and caused the highest annual death-rates of 1·2 in Middlesbrough, 1·3 in Gateshead, 2·0 in Aberdare, 2·9 in Barnsley, and 3·5 in Lincoln. The fatal cases of diphtheria, which had been 33, 46, and 32 in the three preceding weeks, rose to 46, and included 10 in London, 8 in Liverpool, and 3 in Birmingham. The deaths attributed to whooping-cough, which had been 39, 42, and 33 in the three preceding weeks, rose to 40; 11 deaths belonged to London, 5 to Birmingham, and 4 to Liverpool. The deaths referred to scarlet fever, which had been 23, 20, and 21 in the three preceding weeks, fell to 14, of which 4 occurred in London. The fatal cases of enteric fever, which had been 9, 13, and 7 in the three preceding weeks, rose to 9, and included 2 each in Southampton and Hull.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2431, 2436, and 2415 at the end of the three preceding weeks, further fell to 2367 on Saturday, August 21st; 225 new cases were admitted during the week, against 294, 285, and 279 in the three preceding weeks. These hospitals also contained 1134 cases of diphtheria, 58 of enteric fever, 46 of measles, and 9 of whooping-cough, but not one of small-pox. The 995 deaths from all causes in London were 14 fewer than in the previous week, and corresponded to an annual death-rate of 11·5 per 1000. The deaths referred to diseases of the respiratory system, which had been 103, 111, and 129 in the three preceding weeks, fell to 99 in the week under notice, and were 44 below the number registered in the corresponding week of last year.

Of the 3979 deaths from all causes in the 96 towns, 208 resulted from different forms of violence and 374 were the subject of coroners' inquests, while 1162 occurred in public institutions. The causes of 30, or 0·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Manchester, Sheffield, Leeds, Bristol, West Ham, Bradford, and in 76 other smaller towns. Of the 30 uncertified causes of death, 7 were registered in Birmingham, 6 in Liverpool, 4 in Sunderland, 3 in Gateshead, and 2 in South Shields.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,345,500 persons at the middle of this year, 967 births and 552 deaths were registered

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JULY, 1915.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS	Estimated population in the middle of 1914.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.									Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON	**4,516,612**	—	**1326**	**640**	—	**62**	**2**	**16**	**283**		**6**	**2389**	**6·9**	—	**68**	**24**	**43**	**60**	**16**	**95**	**306**	**0·9**	**3860**	**11·1**
West Districts.																								
Paddington	142,055	—	28	13	—	2	—	2	8	—	—	53	4·9	—	—	1	1	1	—	2	5	0·5	102	9·3
Kensington	170,817	—	25	9	—	3	—	2	12	1	—	52	4·0	—	—	—	—	—	—	3	3	0·2	120	9·2
Hammersmith	124,750	—	30	16	—	1	—	—	2	1	—	50	5·2	—	2	1	1	—	—	—	4	0·4	97	10·0
Fulham	158,849	—	35	18	—	1	—	2	7	3	—	66	5·4	—	—	3	1	2	—	1	7	0·6	143	12·1
Chelsea	63,791	—	7	6	—	1	—	—	2	1	—	17	3·5	—	2	—	1	—	—	1	4	0·8	57	11·0
City of Westminster	152,346	—	47	18	—	4	—	—	6	2	—	77	6·6	—	1	—	1	—	1	1	4	0·3	109	9·8
North Districts.																								
St. Marylebone	112,892	—	15	18	—	—	—	—	4	—	—	37	4·3	—	3	2	1	2	—	6	14	1·6	88	10·4
Hampstead	86,731	—	11	10	—	2	—	—	5	—	—	28	4·2	—	1	—	—	—	—	—	1	0·2	42	6·7
St. Pancras	212,497	—	50	32	—	5	—	—	18	5	—	110	6·7	—	1	2	1	2	1	4	11	0·7	198	12·1
Islington	324,764	—	122	50	—	4	—	1	12	7	—	196	7·9	—	5	4	5	5	—	2	21	0·8	296	11·6
Stoke Newington	50,454	—	9	4	—	1	—	1	2	—	—	17	4·4	—	—	1	—	1	1	—	3	0·8	37	9·1
Hackney	223,724	—	93	34	—	1	—	—	10	1	—	139	8·1	—	3	—	1	3	—	6	13	0·8	180	10·6
Central Districts.																								
Holborn	45,861	—	14	3	—	—	—	—	6	2	—	25	7·1	—	—	—	1	—	—	2	3	0·9	47	13·4
Finsbury	83,212	—	45	6	—	—	—	—	5	2	—	58	9·1	—	3	3	—	6	—	9	21	3·3	105	16·2
City of London	17,129	—	2	3	—	—	—	—	—	1	—	6	4·6	—	—	—	1	—	—	—	1	0·8	21	16·7
East Districts.																								
Shoreditch	108,869	—	51	18	—	1	—	—	17	4	—	91	10·9	—	7	—	3	—	—	6	16	1·9	106	13·1
Bethnal Green	127,662	—	72	30	—	2	—	—	10	—	2	116	11·8	—	3	2	2	1	1	3	12	1·2	103	10·9
Stepney	273,265	—	134	80	—	3	1	1	23	1	—	243	11·6	—	10	—	6	5	1	11	33	1·6	259	12·9
Poplar	160,222	—	49	37	—	2	—	—	14	1	1	104	8·5	—	6	1	2	6	—	2	17	1·4	158	12·8
South Districts.																								
Southwark	186,941	—	39	36	—	—	—	2	18	2	—	97	6·8	—	5	1	2	1	—	5	14	1·0	215	15·1
Bermondsey	124,213	—	21	7	—	2	—	—	9	1	—	40	4·2	—	4	—	—	—	—	5	9	0·9	129	13·5
Lambeth	296,724	—	86	26	—	6	—	3	10	7	—	138	6·1	—	4	1	2	2	4	7	20	0·9	290	12·5
Battersea	167,338	—	47	39	—	1	—	—	12	1	1	101	7·9	—	1	—	2	5	2	2	12	0·9	143	11·2
Wandsworth	338,998	—	80	47	—	9	—	—	17	4	1	158	6·1	—	2	—	3	5	2	4	16	0·6	201	7·7
Camberwell	262,020	—	81	31	—	6	1	2	16	2	—	139	6·9	—	—	—	2	3	1	5	11	0·5	176	8·7
Deptford	109,182	—	42	10	—	—	—	—	9	1	1	63	7·5	—	1	2	1	6	—	2	12	1·4	109	12·8
Greenwich	96,037	—	35	10	—	1	—	—	10	—	—	56	7·6	—	3	—	3	3	1	2	12	1·6	113	15·1
Lewisham	172,433	—	27	14	—	2	—	—	7	3	—	53	4·0	—	1	—	—	1	—	2	4	0·3	104	7·8
Woolwich	122,836	—	28	15	—	—	—	—	12	—	—	55	5·8	—	—	—	—	—	—	2	3	0·3	112	12·2
Port of London	—	—	1	—	—	2	—	—	—	1	—	4	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex and age constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

during the week ended Saturday, August 21st. The annual rate of mortality in these towns, which had declined from 14·2 to 12·6 per 1000 in the four preceding weeks, further fell to 12·3 per 1000 in the week under notice. During the first seven weeks of the current quarter the mean annual death-rate in these towns averaged 13·5, against a corresponding rate of 11·4 per 1000 in the large English towns. The death-rate ranged from 4·4 in Perth, 9·3 in Ayr, and 9·4 in Clydebank, to 14·2 Aberdeen, 14·7 in Dundee, and 17·2 in Paisley.

The 552 deaths from all causes were 13 fewer than the number in the previous week, and included 72 which were referred to the principal epidemic diseases, against 79 and 91 in the two preceding weeks. Of these 72 deaths, 28 resulted from infantile diarrhœal diseases, 23 from measles, 8 from scarlet fever, 6 from diphtheria, 5 from whooping-cough, and 2 from enteric fever, but not one from small-pox. The annual death-rate from these diseases was equal to 1·6, against 1·5 per 1000 in the large English towns. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 19, 21, and 29 in the three preceding weeks, were 28 in the week under notice, and included 13 in Glasgow, 8 in Dundee, and 2 each in Edinburgh and Aberdeen. The deaths referred to measles, which had been 46, 33, and 32 in the three preceding weeks, further declined to 23, of which 13 occurred in Glasgow, 3 in Edinburgh, and 2 each in Aberdeen and Paisley. The fatal cases of scarlet fever, which had been 13, 9, and 20 in the three preceding weeks, fell to 8, and included 3 each in Aberdeen and Paisley. The deaths attributed to diphtheria, which had been 7, 3, and 6 in the three preceding weeks, were again 6, and comprised 3 in Paisley, 2 in Glasgow, and 1 in Kirkcaldy. The deaths referred to whooping-cough, which had been 2, 13, and 1 in the three preceding weeks, rose to 5, of which 4 were registered in Glasgow and 1 in Falkirk. The fatal cases of enteric fever occurred in Glasgow and Dundee.

The deaths referred to diseases of the respiratory system, which had been 46, 70, and 56 in the three preceding weeks, slightly rose to 58 in the week under notice, but were 11 below the number registered in the corresponding week of last year. The deaths from the several forms of violence numbered 34, against 21 and 26 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,212,380 persons at the middle of this year, 539 births and 317 deaths were registered during the week ended Saturday, August 21st. The annual rate of mortality in these towns, which had been 14·1, 11·9, and 14·6 per 1000 in the three preceding weeks, fell to 13·6 per 1000 in the week under notice. During the first seven weeks of the current quarter the mean annual death-rate in these towns averaged 13·5, against corresponding rates of 11·4 and 13·5 per 1000 in the English and Scotch towns respectively. The annual death-rate in the week under notice was equal to 14·7 in Dublin (against 11·5 in London and 12·7 in Glasgow), 13·6 in Belfast, 19·0 in Cork, 20·2 in Londonderry, 8·1 in Limerick, and 22·8 in Waterford, while in the 21 smaller towns the mean rate was 8·4 per 1000.

The 317 deaths from all causes were 22 fewer than the number in the previous week, and included 42 which were referred to the principal epidemic diseases, against 24 and 40 in the two preceding weeks. Of these 42 deaths, 28 resulted from infantile diarrhœal diseases, 8 from whooping-cough, 3 from scarlet fever, 2 from measles, and 1 from diphtheria, but not one from small-pox or enteric fever. The annual death-rate from these diseases was equal to 1·8, against corresponding rates of 1·5 and 1·6 per 1000 in the English and Scotch towns respectively. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 16, 13, and 18 in the three preceding weeks, further rose to 28 in the week under notice, and included 14 in Dublin, 9 in Belfast, and 2 each in Cork and Londonderry. The deaths referred to whooping-cough, which had been 8, 4, and 10 in the three preceding weeks, fell to 8, and comprised 4 in Londonderry, 3 in Belfast, and 1 in Dublin. The 3 fatal cases of scarlet fever were slightly below the average in the earlier weeks of the quarter, and included 2 in Belfast and 1 in Dublin. The deaths from measles were recorded in Belfast and Cork, and the fatal case of diphtheria in Dublin.

The deaths referred to diseases of the respiratory system, which had been 36, 26, and 40 in the three preceding weeks, fell to 26 in the week under notice. Of the 317 deaths from all causes, 86, or 27 per cent., occurred in public institutions, and 8 resulted from different forms of violence. The causes of 8, or 2·5 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 96 large English towns the proportion of uncertified causes did not exceed 0·8 per cent.

THE GENERAL MEDICAL COUNCIL AND THE SALE OF LAUDANUM.

AT the last meeting of the Executive Committee of the General Medical Council the following communication from the Privy Council was read:—

The Clerk of the Council,
Privy Council Office, London, S.W., 22nd July, 1915.

Sir,—I am directed by the Lord President of the Council to transmit to you the accompanying copy of a correspondence, as marked in the margin, relating to the sale of laudanum, and to state that his lordship will be glad to be favoured with any observations the General Medical Council may have to offer thereon, with special reference to the Recommendation passed by the Council of the Pharmaceutical Society in January last.

In the Lord President's view, the question to be determined is whether the Society is acting properly in assisting the sale of any preparation of opium that does not comply with the requirements of the new edition of the British Pharmacopœia.

I am, Sir, your obedient servant,
ALMERIC FITZROY.

The Registrar, General Medical Council.

[COPY.]

Privy Council Office, Whitehall, S.W., 8th May, 1915.

Sir,—I am directed by the Lord President of the Council to transmit to you the accompanying copy of a letter received from Dr. F. J. Waldo, His Majesty's Coroner for the City of London and Borough of Southwark, together with a copy of the annual return mentioned in that letter, and to ask you to be good enough to move the Council of the Pharmaceutical Society to favour his lordship with any observations they may have to offer on the point referred to in the first paragraph of Dr. Waldo's letter, and on pages 10–11 of the return.

You will observe that according to Dr. Waldo's statement, laudanum, i.e., tincture of opium, is being made up on a formula distinct from that prescribed by the new edition of the British Pharmacopœia.

I am, Sir, your obedient servant,
ALMERIC FITZROY.

The Secretary and Registrar, Pharmaceutical Society of Great Britain, 17, Bloomsbury-square, W.C.

Coroner's Office, Golden-lane, City, E.C., 4th May, 1915.

My Lord,—I have the honour to enclose a copy of my annual return for 1914, in which I refer to the important subject of the easy purchase of poisonous drugs, such as tincture of opium or laudanum, under which latter name chemists are selling two kinds of different strength.

My return may, possibly, be of service to you and your Council.

I have the honour to be, your obedient servant,
F. J. WALDO, M.D., His Majesty's City Coroner.

The Earl Beauchamp, Lord President of the Privy Council.

Pharmaceutical Society of Great Britain, 17, Bloomsbury square, London, W.C., July 20th, 1915.

Sir,—Referring to your letter of May 8th last enclosing copy of a letter received from Dr. F. J. Waldo, His Majesty's Coroner for the City of London and Borough of Southwark, together with a copy of his annual return, I have to state that these communications have been carefully considered by the Law Committee and the Council of this Society, and I am instructed to inform you that in January last the Council of this Society passed and published the following recommendation:—

"That the policy to be advocated by the Council in regard to the sale of laudanum should be that when 'laudanum' is asked for the 1914 preparation should be supplied and the poison-book signed; but where the 1898 preparation is demanded great care should be taken to label it accordingly, and the attention of the purchaser should be called to the fact that it is the 1898 preparation."

I am, Sir, your obedient servant,
W. J. UGLOW WOOLCOCK, Registrar.

The Clerk of the Council, Privy Council Office, S.W.

The correspondence was remitted to the Pharmacopœia Committee with a request that the Committee would report thereon to the General Council. The serious side of the matter is dealt with in a leading article this week.

A SAD WINDFALL.—By the death of Lieutenant John Alexander Hay Smith, of the 11th Royal Scots, Dundee Royal Infirmary and Dundee Victoria Hospital will benefit to a large extent. Lieutenant Smith was a nephew of the late Mr. John Smith, of Adderly, Forfarshire, who died in 1909 leaving a total estate of £107,973. According to the will Lieutenant Smith was left a large portion of the estate, but was life rented until he reached the age of 25. By his untimely death at the age of 24 the money which would have been his goes to the two above-mentioned institutions, in the proportion of two-thirds to the infirmary and one-third to the Victoria Hospital. It is supposed that the sums will be approximately £25,000 and £11,500.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 4, 1915.

Insanity and the War.

A CURIOUS feature of the psychology of the crowd at all times, one, moreover, which is much in evidence during the present world-war, is the way in which assumptions of a far-reaching character are based on slender evidence and forthwith taken to be facts, which subsequent evidence is rarely utilised to dispute. What more natural, for instance, than to suppose that the agonising experiences of trench warfare, the welter of opposing forces at close quarters, the eternal shell concussions, the indescribable strain in keeping the senses on the *qui vive*, must result in many cases in a breakdown of nerve-mechanisms never calculated to withstand such incessant stimuli, leading to the development of neuroses and of insanity? No sooner is the assumption framed than evidence, in the shape of letters from the front, or actual cases coming under personal observation, is forthcoming to point in the required direction. The topic is taken up in the lay press, and questions are asked in Parliament. Thenceforward the truth of the matter is taken for granted, and it seems to be unnecessary even to refer to facts in support of the contention. But we may well ask: Is all this really so? Is it the case that the war will leave behind it enormous wreckage in the guise of nervous and mental sufferers, more or less permanently incapacitated and uninfluenced by treatment? Obviously, while the war is still in progress it is impracticable to attempt to reach any definite conclusions, but certain considerations may be borne in mind. In view of the fact that the horrors of the battle-field are forcibly borne in on so many who are quite unfamiliar with the sight of blood, of suffering, and of death, we can understand that a proportion become unnerved, unable to go on, unwilling to face the ordeal again. Reference has been made more than once in communications from the front to the "rest-cure" of ten days or a fortnight which has been arranged for such cases removed from the neighbourhood of the fighting, and we understand that in a large proportion of cases this rest suffices and the symptoms are not again complained of. Again, a certain number of cases break down more completely and are sent home, where they come under the observation of nerve specialists in various institutions organised in London and the provinces. Under suitable treatment it is found that once more a very fair proportion of such patients make a good recovery in time. The actual figures, needless to say, will not be forthcoming for a long time, but the probability is that the proportion of these cases to the total number of wounded will not be large.

Other considerations of a more general nature should not be ignored in a discussion of this important question. Rumour has not been busy in attributing neurotic troubles only to our forces; while some people have exclaimed angrily or admiringly on the popular placidity, others would have us believe that in all classes there can be found undue nervous manifestations dependent upon the strain of the war. The view is not based on fact. In the recently published Eighty-fifth Annual Report of the Belfast District Lunatic Asylum, the superintendent, Dr. WILLIAM GRAHAM, comments on the remarkable decrease in the number of admissions for the year as compared with the 12 months preceding, 220 as against 276. He declares that in such a time of upheaval as the present it is natural to suppose that mental suffering ending in brain collapse should be the order of the day, whereas the figures he quotes do not bear out the suggestion. It is true that Dr. GRAHAM does not specify or discuss other factors than the war, which may have reduced the admission rate for the year in his particular case, but he goes on to consider a probable explanation to which it is well that attention should be directed. He holds that "it is not the great tragedies of life that sap the forces of the brain and wreck the psychic organism. On the contrary, it is the small worries, the deadly monotony of a narrow and circumscribed existence, the dull drab of a life without joy and barren of an achievement, the self-centred anæmic consciousness, it is these experiences that weaken and diminish personality and so leave it a prey to inherited predispositions or to the slings and arrows of outrageous fortune." The traveller in Central Africa will face savage men and savage beasts unmoved, but is driven to the verge of madness by the attacks of minute and insistent insects. Now, in the war of to-day many have so vivid a consciousness of the greatness and nobility of the principles for which they are contending that they are in a sense protected from the effects which sights and sounds of a terrifying nature might otherwise exercise over them. Dr. GRAHAM quotes with approval Lord BRYCE'S recent statement that the effect of the fighting on thousands of our own men has been to sober them, to stir their deepest thoughts, and to inspire them with an urgent desire for some idealistic basis of life. He goes even further. Holding that the spectacle of millions of men abandoning home, family, ambition, money, and laying down their lives for a principle is so glorious as to transfigure "the pictures of mangled bodies and human beings gasping in their dark struggle against death," he believes that one of the eventual results of the war will be a great decrease in the amount of mental instability which has been growing in recent years. Certain forces of degeneracy militating against the national well-being will be arrested. People will return to the virtues of a simpler life, partly by choice and partly by necessity, and we may well entertain the hope that what we have sowed in tears those who come after us will reap in joy.

Considerations such as these it is well to bear in mind at a time when there is a feeling of restlessness, uncertainty, and anxiety in the air, and when we are too prone to allow our vision to be coloured and our perspective to be distorted by assumptions and generalisations which calm investigation often shows to be erected on an insufficient foundation of fact.

Laudanum.

THE published report of the recent meeting of the Executive Committee of the General Medical Council affords an interesting sidelight upon the present position of "laudanum." The report includes copies of correspondence on this subject between the Privy Council, the Coroner of the City of London, and the Registrar of the Pharmaceutical Society of Great Britain. It may be remembered that when advance copies of the British Pharmacopœia were sent to the press for criticism, and exhibited to the public at the offices of the General Medical Council, there was some dismay when it was realised that the strength of tincture of opium had been increased so that the sale became automatically subject to greater restrictions. The change in strength was the natural result of the International Agreement relating to potent preparations, and it might perhaps have passed unnoticed if the synonym "laudanum" had not been employed for the tincture of opium of the new strength. Objection was raised to the inclusion of the synonym, since this would hamper the sale of tincture of opium as a domestic remedy. It was urged that it was largely sold in small quantities—pennyworths—for the relief of toothache, but some persons admitted that they had regular customers who purchased much larger amounts for unspecified reasons. The General Medical Council was urged to avert a "national calamity" by withdrawing the synonym before notifying the publication of the British Pharmacopœia in the *Gazette*. Even some of those who had been concerned in the compilation of the British Pharmacopœia tardily raised a protest against the retention of the synonym. The need of restriction was speedily demonstrated in the Court of the Coroner of the City of London, where it was stated by the manager of a large druggist's store that during the past six years he had supplied weekly five or six ounces of tincture of opium to the deceased. The jury appended a rider to their verdict, in which they thanked the General Medical Council "for their beneficent public action in increasing the percentage of morphine contained in the B.P. preparation known as laudanum or tincture of opium to 1 per cent., thus bringing this insidious and dangerous drug within Part I. of the scheduled list of poisons contained in the Pharmacy Act." In communicating this rider to the authorities concerned the Coroner hoped that, in public interest, they would see that the drug was retained in Part I. of the Poisons Schedule, and that they would not allow "laudanum" in any way to be dissociated from its present synonym and equivalent. Meanwhile, the Council of the Pharmaceutical Society of Great Britain, on the advice of its Law Committee, passed and published a recommendation "that the policy to be advocated by the Council in regard to the sale of laudanum should be that when 'laudanum' is asked for the 1914 preparation should be supplied and the poison-book signed; but where the 1898 preparation is demanded great care should be taken to label it accordingly, and the attention of the purchaser should be called to the fact that it is the 1898 preparation." From the correspondence we publish it will be seen that this recommendation may be regarded as an attempt to assist the sale of a preparation of opium that does not comply with the requirements of the new edition of the British Pharmacopœia, and the Lord President of the Privy Council raises the question whether the Pharmaceutical Society is acting properly in this matter.

It is important to bear in mind the meaning of the synonyms introduced in the British Pharmacopœia. They represent only a small selection from the lengthy list of common names under which certain official preparations may be demanded by the public. Synonyms are not inserted for articles which are employed for domestic purposes or in the arts, where the quality of the article is determined by the special purpose for which it is required. For such articles it would be vexatious to render the synonym official, and thus to impose the Pharmacopœial standard of purity. The long list of possible synonyms has to be submitted to an intelligent process of selection. The principle which has guided this selection appears to be the desire to secure public safety by insisting on a definite composition and standard of purity for substances which might be dangerous if employed in strengths liable to variation. When a synonym is rendered official by inclusion in the Pharmacopœia the substance supplied must always conform with the Pharmacopœial standard. For example, if the name "laudanum" were not included in the Pharmacopœia, preparations of different strengths might be supplied when this article was asked for by a member of the public. The publication of the Pharmacopœia without this name would leave the sale of laudanum in a chaotic condition. If the synonym were omitted it would not be necessary for laudanum to conform even with the requirements of the 1898 Pharmacopœia. It has been freely admitted that this substance is largely sold, and it therefore becomes of the utmost importance that the substance sold under this name should have a constant composition. This could only be secured by the employment of the term "laudanum" as a synonym. On the other hand, it is perfectly open to argue that by the increase in the strength of the preparation an element of danger had been introduced. The increase in the strength is, however, safeguarded by the restrictions upon the sale, which lead to comment and explanation. It has been urged by a legal authority that it was unnecessary to alter the strength of this

preparation, inasmuch as the terms of the International Agreement admitted some discretionary power. Such an argument appears to strike at the root of all agreements. To exert discretionary power in connexion with an important preparation of opium would have reduced the value of the International Agreement to a dead letter. The whole aim of the International Agreement was towards the safety of the public when prescriptions were being dispensed in foreign countries, and it became important that drugs having the same name should be of the same composition in the countries of the different signatory Powers. It may be regarded as inevitable that tincture of opium should be brought into line, and it is a subject for satisfaction that the outcome of the increase in strength should be that greater difficulty is in future to be experienced by the public in employing this preparation apart from prescriptions. By carrying over the synonym "laudanum" from the former Pharmacopœia to the preparation in the new standard, it may be hoped that increased difficulty connected with the sale of opium may lead to a diminished consumption of a drug which, apart from danger to life, frequently leads to mental and moral degeneration.

Alterations in the strength of pharmacopœial preparations invariably cause some protest from either the medical profession or from pharmaceutical chemists, but in this particular instance a due recognition of the reasons which have led to the change and a due appreciation of the increased public safety should have led to a chorus of approval, instead of to a suggestion of a means of evading the restrictions. The correspondence has been referred to the Pharmacopœia Committee for report to the General Medical Council, and it may be hoped that no difficulty will be experienced in supplying a satisfactory answer to the question raised by the Lord President of the Privy Council.

The Incidence and Treatment of Tuberculosis.

DURING the past twelve months the diseases occurring amongst the civil population, both from prophylactic and therapeutical standpoints, have received less prominent attention than usual. But that our health authorities are not unmindful of the duties that devolve upon them is demonstrated by meetings which have recently been held at Manchester, Leeds, and Cambridge in reference to the incidence and treatment of tuberculosis. At a meeting of the Manchester Insurance Committee strong appeals were made to the city council to proceed with the extension of the Abergele Sanatorium. It was stated that owing to want of accommodation only 61 persons were at present being treated at this sanatorium, though there were about 600 persons in the city known to be suffering from pulmonary tuberculosis. It was particularly urged that there was need for an extension for the treatment of the tuberculous children. At Leeds a paper was read by Mr. J. C. DAWES, the chief sanitary inspector for Keighley, before a meeting of the North-Eastern Centre of the Sanitary Inspectors' Association. He pointed out that the last available figures for England and Wales, issued in 1910, showed that the annual death-rate from tuberculosis was 1400 per 1,000,000 of the population living, which in actual figures meant a toll of over 50,000 lives. Further, he stated that during the 50 years 1859 to 1910 a decrease of 60 per cent. took place in the tuberculosis mortality-rate. He maintained that sanitation had been proved to be the most potent factor in reducing the incidence of tuberculosis, and made other remarks well worthy of notice, although they traversed well-known lines. He classified the efforts of prophylaxis into direct and indirect sanitation, including in the former the housing of the people in sanitary houses, the establishment of sanitary workshops, work-places, and factories, of sanitary schools, and of a tubercle-free food-supply, the provision of a non-polluted atmosphere, and public cleaning, disinfection, and house supervision. The prophylactic work known to exercise an indirect effect were, in his enumeration, good water-supplies, public and private drainage-works, proper sewage and refuse disposal, town planning, and nuisance abatement. He especially insisted that the greatest and most urgent desideratum was the provision of "anti-tuberculosis houses," to use his own expression, for, as he aptly remarked, the disease had been described as a house disease. This fact is likely to be lost sight of in the popular clamour for sanatoriums, which are but one link in the chain for the suppression of the disease. At a conference held at Cambridge Sir CLIFFORD ALLBUTT likewise urged the importance of more attention being paid to all details of public health in dealing with the problem of tuberculosis. He suggested that in the lean days that were before us public men would be tempted to economise in education, but to do so would be to court disaster if information in respect of public health were curtailed.

In regard to the treatment of tuberculosis, public attention has been somewhat prominently called to the claim of Professor RENON that, contrary to the generally accepted opinion, tuberculosis must and can only be cured by chemical treatment and not by sero-therapy. Professor RENON explained that he has been attempting to find a chemical substance which would check the growth of the bacilli in an animal organism without injuring the elements of that organism. Amongst the substances with which he has experimented have been salts of silver, gold, selenium, mercury, and other metals. He also sought for a medium in which the bacilli developed very readily, and in the course of his inquiry found that alkalisation and the absence of potassium, sulphur, phosphorus, iron, and magnesium were detrimental to their existence. His theory would seem to be that effective treatment of tuberculosis can be obtained by using inorganic substances which arrest the development of the bacilli, and by withdrawing

through the dietary substances indispensable to the life of bacilli in culture. The proposition is not without attraction, but, needless to say, a long time must elapse before definite conclusions can be drawn. At present the research, at any rate that portion which has been publicly announced, has not advanced beyond the experimental stage. Presumably an attempt is being made to obtain a chemical substance in some way analogous to salvarsan. Of recent years in the investigation of the treatment of tuberculosis attempts have been made to increase the resistance of the body against the causal organism, either directly by introducing substances which induce active or passive immunity, or by auto-inoculation, for the internal use of antiseptics has not proved successful. Professor RENON now proposes to revive the use of drugs intended to directly destroy the bacilli. We need scarcely draw attention to the caution that is necessary in placing confidence in results that have only been obtained *in vitro*, whilst the value of any remedy against tuberculosis can only be accurately estimated after a large number of patients have been treated and a sufficient length of time (extending into years) has been allowed to elapse in order to observe the permanency or otherwise of the arrest of the disease. Confirmatory results must be obtained by numerous observers before any therapeutic claim of real value can be established.

We must wait until the results of the new researches upon patients suffering from tuberculosis are forthcoming before heralding the discovery, but doubtless physicians in this country will avail themselves of opportunities that may arise to test the procedure. In the meantime it behoves the public authorities to continue their efforts, stress being laid upon a sufficiently wide grasp of the problem. It is useless to expend money upon the establishment of sanatoriums, and to neglect the sanitary housing of the working classes. The most powerful weapon against tuberculosis is the education of the working classes. It is waste of public funds to place patients in expensive institutions for a time and then to let them return to unhealthy surroundings and occupations. The treatment of advanced cases of pulmonary tuberculosis also presents numerous difficulties, and the question of segregation will have to be carefully considered. One great danger is to allow too much reliance to be placed upon any specific treatment, so permitting general hygienic measures to be neglected. Extremists are useful in their way, but for sure and progressive measures to be established it is absolutely necessary that a combination of methods should be adopted. The instillation into the minds of patients and their immediate friends of the measures which should be adopted in cases of tuberculosis is of the highest value; public information should always be forthcoming from medical practitioners both as to the mode of life that the affected individuals should live, and as to the prevention of the dissemination of the disease.

Annotations.

"Ne quid nimis."

INFANT MORTALITY AND THE BIRTH-RATE.

RECENT statistical returns of the births and deaths of infants in this country are disquieting; regarded individually they are bad enough, but taken collectively they are distinctly alarming. The continued fall in the birth-rate, which has now reached the lowest level heretofore recorded, may have many explanations, but the factor of the deliberate limitation of families, whether from provident or selfish motives, can no longer be ignored. The dissemination of knowledge with respect to the use of contraceptives has undoubtedly contributed to this result, not only among the upper and middle classes, with whom their employment has been reduced almost to an exact science, but even among the poorest, with whom such practices were quite exceptional a decade ago. Whether this explanation has any bearing on the falsification of the prophecies of the scaremongers with respect to "war babies" still remains to be seen, but from facts which are accessible to all those who keep their eyes open it is by no means improbable. While on these and other grounds the fall in the birth-rate is understandable, the figures published with respect to the mortality of infants under 1 year of age during the current year certainly demand more explaining than is afforded by the assumption that the position is due to a high prevalence of epidemic disease engendered by the unusual circumstances or to the dearth of doctors and nurses. That epidemic diseases have exacted a larger toll of infant life than usual cannot be gainsaid, but as an offset to this we must remember that the meteorological conditions have been distinctly favourable, while the many organisations which have been engaged in alleviating every form of distress have made it highly improbable that poverty has been concerned in the results. Indeed, it may almost be claimed that there has never been a time in the history of our country more free from want of employment, and the destitution which want of employment brings in its train, than the present moment. Inquiry at certain important infant welfare centres in London would seem to suggest that the many social and domestic factors of disturbance connected with mobilisation, with the distribution of bounties, and with partings and meetings, have dislocated the even tenor of many a family's daily régime. In fact, without imputing any more serious possibility it may safely be said that the conditions have not been favourable to sober domestic life and the pursuit of those essentials of mothercraft which are so intimately associated with a low infant mortality. So serious does the position appear to those who are actively engaged in combating deaths among infants that the National Association for the Prevention of Infant Mortality has arranged for a conference at the Mansion House on Oct. 28th, at which the Lord Mayor has consented to preside, and at which the causes that are responsible for the present state of affairs will be fully discussed by many of the foremost authorities on the subject. It is to be hoped that out of the mouths of these many counsellors much wisdom will result, and that their advice, in addition to the benefits which are confidently expected from the operation of the new provisions

of the Notification of Births Act, will help to relieve a situation which is beset with many national dangers.

EPIDEMIC CEREBRO-SPINAL MENINGITIS.

WHILE the disease known as "spotted fever" occurs sporadically in England and only very occasionally increases to the dimensions of a grave epidemic, as at Glasgow and Belfast in 1906, during the last 12 months it has appeared in the form of relatively small epidemics of from 40 to 80 cases to a much larger extent than ever before. The prominence which its occurrence among the Canadian contingent at Salisbury gave it in the latter part of last year, and the fact also that some cases occurred on transports from Canada, should not, needless to say, lead to any idea on the part of the uninformed that the disease was "brought over," for this country is never really free from it. Whether the factors that have led to the appearance of the large number of small epidemics above referred to are in any way associated with the movement of troops is a matter for investigation. According to the most recent work on the subject, an epidemic of cerebro-spinal meningitis is not produced by those affected with the disease, but by healthy carriers, who distribute the organisms over large areas and expose many to infection of whom only a very small percentage actually become infected. The difficulty in controlling an epidemic is that the healthy must be dealt with as well as the diseased. Sophian has also pointed out that another means of dissemination of the infection is by the urine of patients; it shows meningococci in abundance, and may be a source of grave danger. Some interesting clinical observations on the disease have been recorded in the July number of *Public Health*, by Dr. Duncan Forbes and Dr. D. C. Adam, of the Public Health Department of Brighton, who have, up to July 9th, dealt with some 51 cases in hospital, of which 25 were discharged cured, 23 died, and 3 remained. Six of the deaths occurred within 48 hours of the patients' admission; two of these received no serum. Dr. Forbes and Dr. Adam think that infection leading to the development of the disease occurs in only a small percentage of those who run the risk, and seems largely a matter of chance. They consider that leucocytes from the nasopharynx, carrying the meningococcus, find their way directly or indirectly to the blood stream, and may pass to the subarachnoid space; there an infected leucocyte, breaking down, will infect the cerebro-spinal fluid and so an acute attack develops. A broad rule is that the prognosis varies with the number of organisms present; should they remain scanty the prognosis is good, notwithstanding unconsciousness and delirium on the part of the patient. There are exceptional cases that are eventually fatal, though the meningococci have been but few. These investigators note what seems to be a new point, that in more chronic cases the appearance of a readily coagulating, markedly yellow cerebro-spinal fluid is invariably followed by a fatal result. Xanthochromia of the fluid is well recognised in certain cases of compression paraplegia from spinal tumour, and it has been described in syphilitic meningo-myelitis, but apparently it has not hitherto been seen in "spotted fever." There is no demonstrable connexion between the severity or otherwise of the attack and the degree of prominence of the cutaneous rash. Dr. Forbes and Dr. Adam lay much stress on the presence of neck rigidity as indicative of meningeal inflammation, and they go so far as to say that the absence of rigidity of the neck muscles may be taken to exclude meningitis. In regard to the treatment of their cases, lumbar puncture was always practised immediately, and withdrawal of fluid always seemed to quiet the patient and to hasten the return of consciousness. They used intrathecal injections of sera prepared by Burroughs and Wellcome, Mulford, and the Lister Institute, without, however, strikingly good results, while in not a few instances injections were followed by an increase in the number of organisms. We hope that other medical officers of health who have been dealing with analogous epidemics will record their experiences with equal care and frankness, for the disease is undoubtedly a menace once it develops, and treatment is still not far removed from the experimental stage.

WILLIAM BROMFIELD.

IT is to be regretted that there exists no roll of the Royal College of Surgeons of England on the lines of Munk's "Roll of the Royal College of Physicians of London." The old surgeons were many of them remarkable and generally very human characters, but for an authoritative account of them we are compelled to trust to scattered and uncertain authorities or to our individual powers of research. We therefore welcome any monograph such as that recording the life of William Bromfield, now reprinted from the Proceedings of the Royal Society of Medicine, 1915, vol. viii. (Section of the History of Medicine), by Mr. G. C. Peachey. Bromfield was the colleague of John Hunter at St. George's Hospital, with which he became connected in 1742. Through the influence probably of John Ranby with Frederick, Prince of Wales, he was appointed to fill one of the vacancies on the surgical staff in 1744. His career thenceforward was that of a successful surgeon. It reached its zenith in 1769, when he was chosen Master of the Company of Surgeons, having become a member of the Court of Assistants in 1760. In 1768 he was chosen a member of the Court of Examiners and Senior Warden, "in which latter capacity, the Master being absent, he presided over the Court from whom John Hunter received his diploma to practise on July 7 of that year." Hunter was then 40 years of age and had already been in practice for five years. Bromfield died at the age of 80 in 1792, thus predeceasing Hunter by one year. He was Hunter's senior by 15 years, having been born in 1713. Unlike Hunter, however, he was no great *savant*. He "seems to have had a partiality for making claims," many of them of great importance, but mostly impossible to substantiate. His many writings were contentious and elicited much hostile criticism. A pupil of rough old John Ranby, he was himself arrogant and self-assertive. "Manually efficient though he was," Mr. Peachey has "been unable to discover in him the possession of either exceptional intellect or extraordinary intelligence. It would seem that he was inclined to spurn literature and reading; in this and many other respects resembling John Radcliffe." He was bitterly jealous of his contemporaries. Moreover, an extant letter of his to Lord Bute proves him to have been a sycophant. Indeed, a less conscientious biographer than Mr. Peachey would have cut the whole matter short by describing him as a man of "unblemished

integrity," that negative virtue which means so little. He twice sat for his portrait, appearing on one occasion old, fat, dyspeptic, and grumpy, and on the other—when Cosway painted him according to that artist's flattering convention—elegant, intelligent, and fairly middle-aged. He preferred Cosway's portrait, and in his will left copies of it, handsomely framed, to three of his colleagues. In the same will, too, he with singular good feeling vindicated the chastity of an elderly lady to whom he left an otherwise suspicious annuity of £200 per annum. On the whole we are interested in old Mr. Bromfield, who may or may not have been a baronet in his own right, who failed of knighthood, who was one of the founders of the Lock Hospital, attended upon Royalty, and quarrelled with John Hunter.

AN ANATOMICAL CONCEPTION OF DISEASE.

IN the Shattuck lecture, published recently in the *Boston Medical and Surgical Journal*, Dr. J. E. Goldthwait offers much evidence in favour of the view that there exist two distinct anatomical human types, structurally different in many ways, and reacting to or inducing pathological states peculiar to each. The one type is referred to as the splanchnoptotic, carnivorous, or congenital visceroptotic; the opposite type is the herbivorous, characterised by a grosser, broader, and heavier build. Between the two can be represented the normal human type, but the writer points out how vague really may be our conception of the normal. In the carnivorous type of individual the whole figure is slighter; the skeleton is lighter and more slender. The hair is more abundant; adenoid tissue is apt to be excessive. Structurally the lungs are apparently smaller than normal; the heart is small; the stomach is long and tubular and its attachments are less firm; the small intestine is shorter than normal; the mesentery is longer, so that on standing the small intestine is almost entirely in the upper pelvis. The large intestine is shorter too. In the skeleton of this type the torso is long; the ribs are longer than normal, and thus downward inclination is very marked. Contrast this general picture with the "herbivorous" individual. The skeleton is larger in proportion and heavier in structure. The face is broad, the jaw square, the neck thick, the shoulders square. The diaphragm is high and both small and large intestines are long. The spinal movements are much less free in the herbivorous type; laterally practically no motion is allowed except at the dorso-lumbar juncture. In the two types the incidence of disease presents differences: in the carnivorous are seen especially tuberculosis and the infections in general, the nervous diseases and acute mental disorders, the hyperglandular disturbances, the progressive anæmias, and atrophic arthritis; in the heavy or herbivorous type, arteriosclerosis, hypertrophic arthritis, gout, diabetes, chronic renal disease, gall-stones, prostatic hypertrophy, and degenerative mental disorders are common. The effect of posture is held to be significant in its influence upon the physiology; the way the body is used is of quite as much importance as the structure of the body itself. These points are entered into in some detail in this paper. The harmful effetcs of posture are evidenced much earlier in life in the visceroptotic individual; in the herbivorous type the general structure of the body withstands such strain for a longer time, but here the chief changes are induced by the large and heavy abdominal viscera. Many suggestions are offered upon the general meaning of the two types. In their differences is to be found the explanation of the varying effects of the same diet upon groups of individuals. Postural albuminuria, too, may be due to visceral anatomical arrangements. It is finally indicated that in the race the carnivorous, slender type are becoming more predominant, due perhaps to modern conditions allowing its survival, in spite of its relative physical weaknesses, and with this type quick nervous force and vigorous mentality further aid it in maintaining its struggle in life.

THE METROPOLITAN WATER-SUPPLY.

THE Water Examiner's report on the condition of the metropolitan water-supply during the month of May was issued last week. The mean rainfall for the month was 3·72 inches, which is 1·97 of an inch above the average mean rainfall for that month during the previous 32 years. May was a bright, warm month, with occasional very heavy local rainfall. All three raw waters (Thames, Lee, and New River) showed a decline in chemical purity as judged by the albuminoid nitrogen, permanganate, turbidity, and colour tests. The filtered waters improved in quality as judged by the usual tests, except the New River water in some respects and the Chelsea supply. Compared with 1914 averages the raw waters yielded results worse than the average according to the albuminoid nitrogen test; worse than the average (Thames excepted) as judged by the permanganate test; better than the average (Lee excepted) as judged by turbidity tests; and better than the average as judged by the colour test. The filtered waters judged by the usual tests yielded results better than their respective averages except New River (albuminoid nitrogen and colour), East London and Sunbury (permanganate), Chelsea (colour), West Middlesex (colour), and Lambeth (albuminoid nitrogen and permanganate). In regard to bacteriological results, the raw Thames and New River waters contained fewer, and the raw Lee water more, bacteria than their respective averages for the year 1914. Some of the severe storms were very local, and this accounts, no doubt, for the opposite variations in quality shown between the sources of supply. Thus on May 6th a severe storm passed across London from west to east. More than 3·00 inches of rain fell in Clerkenwell, where the storm was most severe, while in the south of London there was practically no rain.

THE USE OF LARGE DOSES OF DIGITALIS IN DIPLOCOCCAL PNEUMONIA.

SINCE 1891 Professor Maragliano has treated cases of pneumonia in his clinic at Genoa by digitalis in large doses, and the explanation he gave of its action was that it exercised a special antitoxic influence against the pulmonary toxæmia. This idea stimulated research, and Lucallo communicated a paper to the Seventh Congress of Medicine in 1896, in which he concluded from the result of his experiments that this drug had a marked specific bactericidal power against Fränkel's diplococcus, and was capable of neutralising the toxalbumins. Morelli in 1912 observed that the pneumococcus became attenuated and diminished in virulence by contact with digitalin derivatives.

Other observers, such as Naegeli, Frank, Wenzel. Barth, and Petrescu, have published statistics of the mortality among cases of pneumonia treated by this method. Not that statistics furnish absolute proof of its efficacy, since pneumonia is a disease which varies singularly in its fatality according to age, particular organic conditions of the patient, and type of epidemic. In a recent issue of the *Annali dell' Istituto Maragliano* Dr. Manfredi gives details of 18 cases, all differing in severity, age, and date on which the treatment was commenced. In all these cases excellent results were obtained, notwithstanding that the general mortality from pneumonia in Genoa at the time was 24 per cent. A precocious crisis was generally seen when treatment was begun in the first three days of the disease and the mortality was *nil*. Professor Maragliano's method of administration was followed. On the first day 4 grammes of digitalis were given in infusion and in severe cases the dose was repeated in 24 hours. When the frequency of the pulse began to be less the quantity of digitalis was lowered and when the pulse reached a figure about normal the drug was suspended, even though the temperature was high. Usually from 12 to 16 grammes of digitalis during the course of a case of pneumonia proved sufficient and sometimes a less quantity produced the effect.

THE DESTRUCTION OF FLY LARVÆ BY HELLEBORE.

IN an annotation in THE LANCET of July 24th we referred to some experiments made at the instigation of the United States Department of Agriculture on the destruction of fly larvæ in horse manure and other garbage. In the Bulletin (No. 118) then issued it was stated that by far the most effective, economical, and practical of the substances tried for larvicidal purposes was commercial borax. In a subsequent Bulletin recently received (No. 245) a continuation of the investigation is described. Here again the object of the inquiry was to find a substance that would destroy the larvæ of the house-fly in their principal breeding-place—namely, horse manure—without injuring the bacteria or reducing in any way the fertilising value of the manure. A warning was issued in the first Bulletin as to the possible injurious action of large applications of borax-treated manure on plants. Further investigation was directed to discover, if possible, some other substance effective as a larvicide but without possible toxic action on vegetation. A good many substances were tried, and in the end the conclusion was reached that powdered hellebore was the most efficient and practical of all the materials tested. Powdered hellebore, using one-half pound to ten gallons of water and applying this to eight bushels of manure, is an effective larvicide and exerts no injurious action on the fertilising value of the manure as determined by bacteriological and chemical analyses, and no injurious action on plants has been detected in any of the field tests. While borax may be applied to manure with proper precautions and the treated manure may be added to the soil at the rate of 15 tons to the acre without injuring vegetation, excessive quantities may be harmful; it may be applied to manure through carelessness in excess, and injury to vegetation may result. In the light of these recent experiments it seems advisable to recommend borax as a larvicide for the treatment of outhouses, refuse piles, and all other places where flies may deposit eggs. On account of the effects of carelessness and because large quantities of manure are sometimes used by truck growers, it seems advisable to guard against possible injury to vegetation by recommending powdered hellebore for the treatment of manure. Here no injury can arise from the use of excessive quantities, as the substance is entirely decomposed in the course of the fermentation of the manure. This information is valuable, powdered hellebore being quoted in this country at about 1*s*. per pound.

SALINE INJECTION INTO THE FEMORAL VEIN DURING AMPUTATION OF THE THIGH OR DISARTICULATION OF THE HIP.

IT is well known that patients who have lost much blood bear major amputations of the lower limb badly. The prognosis of these operations becomes graver the nearer the trunk is approached, and attains its maximum in disarticulation of the hip—a very grave operation for a wounded man with gangrenous septicæmia and scarcely perceptible pulse. Hence many surgeons refuse to operate in such a case. At a meeting of the Académie de Médecine M. Savariaud called attention to a method which he had found successful at the military hospital of Verdun in a considerable number of cases. He showed that the shock of the operation may be suppressed by using an appropriate anæsthetic, preventing hæmorrhage, and injecting into the circulation 1000 to 1500 c.c. of normal saline solution. He selects ether for the anæsthetic, and prevents hæmorrhage by an elastic tourniquet around the root of the limb or around the waist (according to the method of Mombourg). He lays great stress on the saline injection. He uses a large glass vessel with the capacity of two litres attached to a rubber tube and cannula, which are sterilised at a temperature of 115° C. for an hour with the other dressings. The cannula is conical, with an aperture of 2 mm. at its point, while its base is of the size of a little finger. It is thus capable of being introduced into the femoral, saphenous, or other large vein. When the limb has been amputated, all air having been expelled and the temperature of the jet of saline solution tested on the forearm of the operator, the cannula is introduced into the femoral vein, the lumen of which has been obliterated by means of forceps. An assistant then raises the vessel containing the solution to a height of 60 cm. above the table and 1500 c.c. were infused in two or three minutes. At the beginning of the infusion the stump of the femoral artery scarcely beats. As the solution enters the circulation the pulsations become stronger and stronger. M. Savariaud has by this method operated on patients who had no pulse and has even performed double amputation on exsanguine patients. He has never lost one from shock in the 24 hours following operation. Patients who had no pulse before operation and who scarcely breathed awoke from the anæsthetic singing. He considers the method much more efficacious than subcutaneous injection which would require almost a day for the absorption of the same quantity of fluid. Another advantage of this rapid infusion is that it causes such a rise of blood pressure that the small arterioles of the stump begin to bleed and the hæmorrhage can be arrested by forceps or ligature, thus avoiding the danger of post-operative hæmorrhage. M. Savariaud has not found that the

method has any dangers. At first he was cautious and injected only 1000 c.c. of saline solution with a cannula of 1 mm. into the saphenous vein. Soon he found out that these precautions were useless and that the more rapid the injection the better the result. He also surmises that the injection of a few bubbles of air has no injurious effect.

THE OPENING OF THE WINTER SESSION.

THE larger beneficent results of the war upon medicine belong to the future, though in numerous ways good has already followed. In no war has medicine played such an important part as it has in that which is now raging throughout the European continent, and when the full story of what medicine has accomplished is told the prestige gained will react upon public opinion and engender that better understanding between medical men and the public which is so necessary for social progress. The very fact that there is a dearth of medical men owing to the demand for their services at the front shows how useful their work has been, while the absence of epidemic disease in the army has been their proof of worth.

The sad influence of the war is reflected in the arrangements, or rather lack of them, in regard to the opening of the medical schools. Usually the beginning of the winter session witnesses social gatherings of past and present students, festive dinners, and reunions of sundry kinds, but the war has necessarily hindered these fraternal amenities, and some schools have definitely announced that there will be no opening ceremony of any kind. In London, at St. George's, St. Thomas's, and Westminster medical schools, for instance, there will be neither dinner nor opening address, though at Middlesex Hospital Medical School Dr. John Cameron will address the students at 3 o'clock on Oct. 1st, the date on which most of the schools open, but there will be no reunion dinner. At the London (Royal Free Hospital) School of Medicine for Women Mrs. Willey, M.S., M.D., will give an introductory address. In the provinces the University of Sheffield has decided to have no opening ceremony, but at Leeds Sir William Osler will deliver the inaugural address on Oct. 1st.

RENAL DECAPSULATION IN SOME FORMS OF BRIGHT'S DISEASE.

SURGEONS have recently made certain advances in the treatment of some forms of Bright's disease, which are reviewed by Professor Rovsing in *Hospitals-tidende*, Nos. 2 and 3, 1915. Professor Rovsing classifies Bright's disease into septic and aseptic nephritis. The septic nephritis is most often due to the bacillus coli, and is best treated by internal antiseptics, such as salol and urotropine, washed down by large quantities of distilled water, and vaccines. Even in the most severe cases, with miliary abscesses scattered throughout the kidney, with great œdema of the renal substance and with violent hæmorrhages, medicinal treatment is more effective than any operation. But in the aseptic nephritis, in which class Professor Rovsing includes the large white kidney, the small granular kidney, and other intermediate forms, operative treatment is often strikingly beneficial. Nephrolysis or decapsulation, in which the capsule of the kidney is divided, adhesions are freed, and the fatty capsule is removed as far as possible when it shows fibrotic changes, has been practised by Professor Rovsing for many years. Altogether he has operated on 46 patients, 9 of whom were operated on before 1901, and 37 between 1901 and 1913. In every case in which there was any doubt as to the nature of the disease the diagnosis was confirmed by a microscopic examination of a small portion of the kidney. One patient was an officer, aged 37, who suffered from parenchymatous nephritis. He was much debilitated by attacks of hæmaturia and severe albuminuria. Catheterisation of the ureters showed the kidneys to be equally affected, but as the patient's career called for heroic measures bilateral decapsulation was performed. The albuminuria disappeared eight days later, and during the following observation period of nearly three years neither albuminuria nor hæmaturia was observed. The officer no longer looked pale and flabby and was able to perform the most arduous duties. This is only one of the many striking cases which Professor Rovsing reports in full. He claims that decapsulation is capable of curing completely the various forms of aseptic nephritis associated with hæmaturia, albuminuria, and pain. He insists on the necessity for the early differential diagnosis of septic and aseptic nephritis, and he urges physicians to familiarise themselves with the technique of catheterisation of the ureters, so that the urine drawn from the two kidneys may be examined separately.

VACCINATION AND TETANUS.

THE risk of the occurrence of dangerous complications after the performance of vaccination against small-pox constitutes one of the stock arguments of the opponents of this simple prophylactic measure, and of all possible sequels tetanus is perhaps the most alarming. Hence it is of the greatest importance that the reality of this particular risk should be carefully investigated. The results of such an inquiry conducted by Dr. John F. Anderson, director of the Hygienic Laboratory of the United States Public Health Service, are set forth in a recent report,[1] and are of a reassuring character. Experiments were made by Dr. Edward Francis as to the possibility of infecting guinea-pigs and monkeys, which are susceptible to both vaccinia and tetanus, by inoculation with a mixture of vaccine and tetanus organisms, but the experimental animals all failed to develop tetanus. Neither did the living organisms establish themselves in the vaccination lesions, nor did the amount of toxin present suffice to induce symptoms. Hence it seems unlikely that the source of tetanus in the few cases that develop in human vaccinated persons is to be traced to contaminated lymph. This conclusion is strengthened by the rarity of such cases, only 41 being recorded among over 31 million vaccinated subjects, and by the failure of Dr. Anderson to identify B. tetani in samples of lymph sufficient for 2 million vaccinations. Further, no cases of post-vaccinal tetanus were reported in the United States Army and Navy in the decennium 1904–1913 among 585,000 persons vaccinated, although the lymph used came from the same stocks as were used for the civil population. Another argument against the possibility of infection being derived from contaminated lymph may be drawn from the rate of mortality among the few patients who suffer from tetanus after vaccination, taken in conjunction with the average period

[1] Public Health Reports issued weekly by the U.S. Public Health Service, vol. xxx., No. 29, July 16th, 1915.

of the onset of symptoms. The average mortality among cases of post-vaccinal tetanus in the United States was 75·2 per cent., while the average period that elapsed between vaccination and the onset of symptoms was 20·7 days. Now a mortality of 75 per cent. corresponds, generally speaking, with an incubation period of ten days or less, a high mortality corresponding with a short incubation. Hence the probability arises that in the cases in question the date of infection with tetanus was not less than ten days after the vaccination, the organisms not being contained in the vaccine but introduced subsequently by careless treatment of the sore.

WE announce with much regret the death at the comparatively early age of 49 of Dr. Ralph W. Johnstone, one of the senior medical inspectors of the Local Government Board.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

THE WEEK'S SUBSCRIPTIONS.

THE subscriptions to the Belgian Doctors' and Pharmacists' Relief Fund received during the week have been as follows:—

	£	s.	d.
Mr. C. B. S. Watson ...	5	0	0
Cape of Good Hope Branch (Western Division), B.M.A.—			
Dr. E. B. Fuller	5	5	0
Dr. McGowan Kitching	2	2	0
Dr. Chas. Anderson ...	5	5	0
Dr. G. W. B. Daniell	1	1	0
Dr. Simpson Wells ...	1	1	0
Dr. Benjamin Cohen	0	10	6
Dr. Hugh Smith ...	5	5	0
Dr. C. C. Elliott... ...	5	0	0
Dr. Werdmuller... ...	0	10	6
Dr. Darley Hartley ...	1	1	0
Dr. W. A. Carden ...	2	2	0
Dr. C. J. Hill Aitkin...	1	1	0
Dr. E. F. W. Moon ...	1	1	0
Dr. W. Thomas	5	5	0
Dr. Gerecke...	1	1	0
Dr. J. Conroy	1	1	0
Dr. F. Waldron	2	2	0
Dr. S. B. Syfret	2	2	0
Dr. H. Kramer	2	2	0
Dr. Fred Hazell	1	1	0
Dr. Bolger	2	2	0
Dr. Reynolds	1	1	0
Dr. Guillemard	1	1	0
Dr. S. F. Silberbauer...	1	1	0
Guernsey and Alderney Division, B.M.A. (per Dr. H. D. Bishop, Hon. Sec.)—			
Dr. Carruthers	0	5	0
Dr. Bishop	0	10	0
Dr. Wallace	0	10	0
Dr. Bulteel	0	5	0
Dr. Gibson	0	10	0
Dr. Bisson.....	0	5	0
Dr. Bostock	0	5	0
Dr. R. W. Winstanley...	1	1	0

Subscriptions to the Fund should be sent to the treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham-gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Ltd.

THE APPEAL FOR SURGICAL INSTRUMENTS.

Surgical instruments should be sent to the Master of the Society of Apothecaries, Apothecaries' Hall, Blackfriars, E.C.

LITERARY INTELLIGENCE.—A second edition of "Diseases of the Nervous System," by Dr. H. Campbell Thomson, is announced by Messrs. Cassell, for immediate publication.—Messrs. Henry Frowde, Hodder and Stoughton (Oxford Press Warehouse, Falcon-square, London, E.C.), will publish early in September, a companion to the R.A.M.C. Training Book, entitled "The Stretcher-Bearer," illustrating the stretcher-bearer drill and the handling and carrying of wounded, by Georges M. Dupuy, M.D. The book is intended to form a companion to the R.A.M.C Training Book, showing the different evolutions of the stretcher bearers by photographs illustrating the execution of each special command, and is specially designed to assist those who have had no experience in military or ambulance training to enable them to form a clear idea of a command by seeing the order actually carried out.

ECONOMY IN FOOD DURING WAR.[1]

BY A. K. CHALMERS, M.D. GLASG., F.F.P.S. GLASG., D.P.H. CANTAB.,
MEDICAL OFFICER OF HEALTH, GLASGOW.

ECONOMY in food during war is happily an unusual theme for discussion by this association. Its importance under present circumstances is due to the fact that food forms a very considerable item in our national expenditure, and the urgent need for restricting expenditure in all directions save one is being urged from many platforms.

Economy in food has two sides: it may mean better selection in what we buy, or better use of what we have. The poor, I think, frequently err in the first direction, the wealthy just as frequently in the second, and there is waste in both. I propose asking whether and how this may be avoided. Whether we agree as to the answer is of less importance than that we should realise how important to the national finance and national well-being economy in food may become. Take two illustrations.

For some years past the quantity of butcher meat imported from abroad has ceased to increase at its former rate, and the Board of Agriculture has told us that the shortage has been met by increased home production.[2] More recently the same Board has issued a series of leaflets containing suggestions for the formation of village food societies, with the object of increasing the production and utilisation of certain foodstuffs, including wild fruits. Economic forces alone determined the former movement; war is the declared reason for the village schemes. It is well to remember that the first indication that certain sources of food were not inexhaustible came during a time of peace and great prosperity; that even without war and possibly within a generation we should in all likelihood have been compelled to consider what revision of our sources of food-supply was necessary to avert shortage, and that continued shortage in the nitrogenous elements of food ultimately means starvation. Within limits the other principal elements of food—the fats, starches, and sugars—may replace each other in nutrition, but none of them can for chemical reasons produce or replace the nitrogenous.

Under peace conditions we pay, it is stated, something like 300 millions annually as the price of food imported from abroad. Whether we have been wise in preferring this lavish expenditure to the neglect of home sources of food-supply is a question for the economist. At the moment, and for our present purpose, it will be more useful to consider whether we are making the best of what we have. Take a simple illustration.

Physiological Economy in Nutrition.

The manufacturer whose chimney pollutes the atmosphere with the unconsumed products of combustion is accused of economic waste because he is discharging into space material that might have become a source of heat. His supply of fuel has not been related in time and quantity to the temperature and volume of the air which he can supply for combustion. To anticipate a parallel, the metabolism of his furnace is at fault. In other words, the relation between the supply of fuel and

[1] A paper read at the Forty-first Annual Congress of the Incorporated Sanitary Association of Scotland, held in Glasgow, Sept. 1st to 3rd, 1915.

[2] Agricultural Statistics, 1913, Cd. 7551, p. 286.

the means of consuming it has not been properly adjusted. He fails to get full advantage of the heat his fuel contains, and the most obvious result is black smoke. There is a certain parallel between this and the physiological economy of nutrition. The body requires a certain amount of food varying in character and for different purposes. In early life the organs must be built up; at all times the body heat must be maintained; work must be done; tissue waste must be made good, and it is possible to translate the combined demand which these make into the equivalent energy which may be obtained from a given quantity of food. But defective food metabolism has a different result from the corresponding defect in the boiler furnace. There is no convenient and easy exit for the unconsumed products such as the chimney affords.

One end of the scale of nutrition is controlled by the power of the body to digest or assimilate or convert into its own structure the nutritive material which it obtains from food; the other by its power of disposing of the waste material which every form of bodily energy produces. Between them lies the whole field of metabolism; the building up of the body from the food elements, and the breaking down of the tissue cells in heat and other forms of energy, and on the balancing of these two healthy living depends. If the supply of food for building up is restricted stunted growth results or energy fails; if it is continuously in excess of what is required for physiological needs disease results, and the high-tension arteries which figure so largely in modern diseases are probably more often the result of persistent eating to excess, combined with sedentary life, than of business worries.

Food metabolism, then, represents the nexus between the intake of food on the one hand and the demand for heat and energy on the other, and its perversion implies disease. In peace time the amount and variety of food in which a man may indulge is limited only by his dietary taste and his ability to purchase. If he chooses he may overeat, and no one suffers save himself. In time of famine or siege everyone would be rationed, and the only possible standard of supply would be the physiological requirements of the system—so much nitrogenous food, so much starchy food or cereals, so much fat, &c. Variations dependent on the ability to purchase would cease, and the need of a household would be the measure of its supply. The standard is an ideal one and almost unattainable save under the pressure of necessity, but the difference between the siege ration and unregulated indulgence in food represents something which includes one form of waste which may be called physiological, because it implies the consumption of food much in excess of the amount necessary.

Another form of waste, equally preventable, is wholly economic in the strictest sense. It prevails in the household, the hotel, the restaurant, the club—wherever, indeed, food is prepared and consumed. It is largely a woman's question. It is the waste of surplus food; the failure to take out of the last ounce all the energy it contains. Bread is probably the outstanding illustration.

Still a third form of waste at the present time is the waste of fashion in food. It was in this connexion that Hutchison insisted on the need for an economic test for food. We pay for fashion and taste in food as we pay for cut and style in dress. In neither case does the amount paid represent the value of the nourishment or protection obtained. Salmon, turbot, and eel, herring, mackerel, and mullet are rich in fat as well as proteid. Cod and haddock, although poor in fat, have almost as much proteid as halibut, which costs about twice the price of cod. The calorie value per pound of herring and mackerel is equal to about two-thirds that of salmon; while the absence of fat in cod and haddock may easily be corrected by the addition of butter or margarine in sauce.

Remember the conditions of the struggle. We are told that this is a war of exhaustion—exhaustion of resources. It has been stated recently that half the national income is being spent thereon. What is unnecessarily spent on food is lost to munitions.

A Standard Dietary.

It is difficult to speak of a standard dietary without spreading a net for the unwary. The fault is not in the standard, but in the use made of it. The potential energy or value in calories[3] of a given quantity of mixed food is readily ascertained, but when transformed into a standard dietary for daily use, difficulties begin.

It is said that the actor Kean "used to adapt the kind of meat he ate to the part he had to play, choosing pork for tyrants, beef for murderers, and mutton for lovers." I suppose this is an exaggeration, but it embodies, at least, a common experience. Monotony in diet is fatal to the enjoyment of it. There must be variety, and dietary scales usually fail in this. Most reforms in the dietary scales of institutions have had the introduction of variety as one of their main objects.

Another pit digged for the unwary by the standard diet is the mechanical use of it in the calculation of dietary scales. Weight, age, sex, exposure, work, all have part in the construction of a standard diet, but when this has been ascertained and its weight multiplied into the number of persons to be fed, waste in one or other constituent invariably, I think, results. The wastage in bread and butcher meat we hear so much of at present results from this. A standard diet is useful for revising and correcting dietary scales, but its mechanical application leads to extravagance.

The physiological classification of food-stuffs is well known. The growth or body builders are the foods containing nitrogen,[4] the heat and energy group includes the fats, starches, and sugars. We may be said to live on the former and work on the latter. Leaving aside the vegetable foods, which are valuable and necessary mainly as a source of mineral salts, the quantity of the principal constituents of food consumed by men doing an average amount of labour may thus be stated from the average of many observations in Europe and America:—

—	Weight in ounces.	Grammes (approximately).	Nitrogen ratio.	Calories.
Protein ...	4·51	128	1·0	524 (nitrogenous).
Fat	2·32	66	0·5	612 (non-nitrogenous).
Carbohydrates ...	18·32	519	4·0	2139 (non-nitrogenous).
	25·15	713		3275

Food is not, of course, bought under any of these categories, but they will help us to understand the nutritive value of the articles which

[3] In physics the amount of heat required to raise the temperature of a given volume of water 1° C.

[4] The flesh of animals, the white of egg, much of the solids left in milk after creaming, and varying proportions of most cereals are common illustrations.

contain them. Observe, however, that the nutritive ratio—i.e., the proportion of the proteid to the non-nitrogenous food—is 1 to fully 5, and remember that, while the fats and starches are to some extent interchangeable in function, neither can replace the nitrogenous. By weight the relation between the proteids and the other constituents is 1 to 0·5 of fats and 4 of carbohydrates, but owing to the greater heat value of equivalent weights of fat its calorie ratio per 100 from nitrogenous sources is 117. Healthy dietary demands that this proportion be maintained during adult life at least. Every inquiry into the dietary of the poor has disclosed a tendency to excess of carbohydrates. During the period of growth and convalescence from illness the proportion of nitrogenous food should be somewhat greater; in old age less. No single article of food, however, contains these constituents in the proportion required, and hence the necessity for a mixed dietary.

Here are some illustrations of nutritive values of articles in daily use, calculated as calories or heat units per pound weight unless otherwise stated.

1 lb.	Calories derived from—			Total calories.	Current price in pence.
	Proteid.	Fats.	Carbohydrates.		
Meat (uncooked, not much fat)	372	147	—	519	17
Bread	149	63	910	1122	2
Cheese	614	1012	—	1626	10
Milk (1 pint)	97	193	121	411	2½ per pint.
Potatoes	28	4	426	459	½
Herring (3)	362	299	—	661	12 per doz.
1 egg (weighs 2 oz.)	27	51	—	78	18 ,, ,,
Butter, 1 oz.	—	236	—	236	19 ,, lb.
Margarine, 1 oz.					4 ,, ,,
Oatmeal	242	253	1208	1703	2½ ,, ,,
Barley meal	236	84	1320	1640	2¼ ,, ,,
Lentils	429	84	1088	1601	4 ,, ,,
Ratio of calories in standard diet	100	117	406	—	—

These are the potential calorie values of several foods, but it must be remembered that a certain proportion of most of them is not absorbed during digestion, so that the actual food value is almost always less than the calorie equivalent. This loss may be stated at about 10 per cent. overhead. The starches, as a rule, lose least, the fats a little more, and the proteids a still larger proportion, which is more marked in the vegetable proteids than in those from animal sources. This is in part due to the cellulose present in vegetables, and their cooking requires more care.

Carbohydrates (the starches and sugars) cost little, the fat of margarine has the same dietetic value as that of butter and costs one-third of the price at present. Oatmeal is rich in fat as well as proteid, three good herrings have more fat than 1lb. of lean butcher meat and cost about one-sixth of the price, unless meat is bought as "odd pieces."

The problem of economic dietary is the selection of the source of the nitrogenous element. One pound of lentils, costing about 4*d.*, will yield more proteid than a pound of butcher meat at 1*s.* 5*d.*, and in addition almost one half of the daily calorie value required from the carbohydrates. They are deficient in fat, however. For 100 proteid calories obtained from butcher meat in the foregoing table the price is 4½*d.*; for a similar quantity from cheese rather more than 1½*d.*; from oatmeal fully 1*d.*; from lentils rather less than 1*d.*; and from herrings about ¾*d.* Taken generally and for equal quantities, this confirms the statement that animal proteid is about four times dearer than vegetable. There is, however, some risk of exaggerating the difficulty, and a sudden and violent alteration in food customs is neither necessary nor desirable.

More important, indeed, is the need for reducing the wastage in surplus food which takes place, I think, among all classes. The avoidance of waste in food is probably more urgent than the search for alternative sources of nitrogen. Dietary is more than the art of gratifying the palate, and while food must be both varied and appetising, the question of alternative sources both of nitrogen and of fats is of importance to everyone. The dietary of the poor usually lacks a proper proportion of proteids, fats, and vegetables, and has an excess of starches. Hutchison says the cheapest sources of proteids, or tissue builders, are skim milk, fish, cheese, and the pulses when they can be digested, while margarine and dripping are the cheapest sources of energy.

The difficulty which lies in the way of special dietary is the barrier of individual taste. Only an invalid, and even an invalid only sometimes, will accept a prescribed form of dietary; but something might be urged in favour of a more frequent use of substantial soups, not the soup which stimulates appetite only, but that which affords substantial nourishment. Scotch broth or vegetable soup with bread, lentil soup, barley soup, potato soup, tomato soup thickened with flour or sago, are all satisfying and nourishing. Most cookery-books, I think, omit to point out the greater value of barley[5] and milk compared with rice and milk. Like most other foods, barley requires careful cooking. It is often badly cooked because hurriedly cooked. It should be burst with water, and boiled very slowly, avoiding too much water. Milk, in the quantity desired, should be added gradually, and salt or sugar according to taste. Badly cooked barley is both unpalatable and indigestible.

Cheese is another nutritious form of dietary, and may be cooked in a variety of ways. It has risen in price, but is rich in proteid and fats, and has a high calorie value.

Probably no food is more wasted than bread. Most households, I think, purchase too much at a time, and one cannot always live on bread pudding. It should be at least one day old when used. Syrup or treacle may occasionally replace butter. Both, like jam, are rich in sugar, which has a high calorie value, almost wholly available as a source of energy.

Potted meat has, unfortunately, gone out of fashion. It is rich in nitrogen and very nutritious, but requires careful preparation. It is also a cheap form of food, and the details of its composition are well known.

The question of cooking is too important to be introduced as a side issue, and is better taught in the class-room. Generally, it may be said that cooking diminishes the digestibility of animal foods but increases that of vegetables.

The Value of Management.

Economy in dietary, therefore, is very much an appeal to the individual, who must answer for

[5] Barley meal ..... Proteid. 12·7 ..... Fat. 2
Pearl barley ..... 7·3 1
Rice ..... 5·0 ..... 0·8

himself whether in time of national emergency he is not using in a wasteful way resources which should be applied to other ends. Individuals, however, are grouped in households, and it is the mother of the household who can decide what fraction of the 300 millions we pay annually to foreign producers of imported food-stuffs can be retained in this country by a better use of home products.

When mistress and maids alike are inspired by the conviction that they are as truly helping the national cause by preventing waste as in making shells, a good deal will be accomplished. A similar duty is laid upon hotel and restaurant managers and the directors of public institutions. But the hotels and restaurants would find both an impulse and encouragement to avoid waste if the movement began by their patrons accepting simpler food and less ample choice than is demanded by what are called the pleasures of the table.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Report of the Registrar-General for Ireland.

THE Fifty-first Annual Report of the Registrar-General for Ireland[1] contains points of special interest. The outstanding features in the statistics for 1914 are as follows. The birth-rate (22·6 per 1000 of the population) was low; the marriage-rate (5·41)—number of marriages per 1000 of the population—was the highest since 1867; the death-rate (16·3) was the lowest recorded in Ireland since 1868; and the emigration-rate (4·6) was much below that for any year since Emigration Returns were first compiled in 1851, while the estimated population in the middle of 1914 showed an increase of 2386 on the estimate for the middle of 1913. The number of births registered during the year 1914 amounted to 98,806—50,659 boys and 48,147 girls, or 105·2 of the former to every 100 of the latter—the ratio to the estimated population being 1 in 44·3, or 22·6 per 1000, which is 0·7 below the average rate per 1000 for the ten years 1904–1913. Of the 98,806 births registered in Ireland during the year, 95,863, or 97·0 per cent., were legitimate, and 2943, or 3·0 per cent., were illegitimate, the latter being 0·3 above the corresponding average percentage for the preceding ten years. As regards illegitimacy, Ireland compares favourably with most other countries. The male children born in wedlock numbered 49,141, and the female 46,722, or 105·2 of the former to every 100 of the latter; of the illegitimate children, 1518 were males and 1425 were females, being 106·5 boys to 100 girls. Of the children born in Ulster 4·0 per cent. were illegitimate; in Leinster the percentage was 3·2; in Munster, 2·4; and in Connaught, 0·7. The marriages registered during the year numbered 23,695, being equivalent to a rate of 5·41 per 1000 of the estimated population; this rate is 0·33 above that for the previous year, and 0·22 above the average for the ten years 1904–1913. Of the men married 7·9 per cent. were widowers, of the women 4·0 per cent. were widows. Of the men married 1·63 per cent. were minors, of the women 6·24 per cent. These percentages are much less than the percentages of minors in England or Scotland. There were 71,345 deaths registered in Ireland during the year 1914, equivalent to 1 in 61·4, or 16·3 per 1000 of the population estimated to the middle of the year. The deaths of males amounted to 35,812 and those of females to 35,533, the rate for males being 16·4 per 1000 and for females 16·2 per 1000. The death-rate (16·3) is 0·8 below that for the year 1913, and also 0·8 below the average rate for the ten years 1904–1913. Of the 71,345 deaths registered during the year, 4061 took place in infirmaries and general and special hospitals, 1507 in public lunatic asylums, 9767 in workhouses and workhouse hospitals, and 56,010 were of persons who died "at their own homes, &c." Old age, as usual, occupies first place in the table of causes of death, being credited with 11,565 deaths; tuberculosis comes next with 9089 deaths; and then, in order, heart diseases, bronchitis, pneumonia, cancer. The decline in the tuberculosis death-rate in recent years is very marked. From 1864 to 1878 it varied between 2·4 and 2·6 per 1000 living. From 1879 to 1908 it varied between 2·6 and 2·9, reaching the latter figure in 1880, 1897, 1898, 1900, and 1904. From 1904 the decline has been fairly steady, the rate in the successive years being: 1904, 2·88 per 1000 living; 1905, 2·70: 1906, 2·67; 1907, 2·66; 1908, 2·58; 1909, 2·41; 1910, 2·28; 1911, 2·20; 1912, 2·15; 1913, 2·14; and 1914, 2·07. In spite of this decline the rate is still much higher than that for Scotland, viz., 1·64, and for England, 1·4. The decrease in deaths from tuberculosis in recent years has been most marked in the provinces of Leinster and Ulster and hardly noticeable in Munster. During the year 1914 the deaths of infants under 1 year of age numbered 8622—males 4778, and females 3844—affording a rate of 87 in every 1000 births registered, as against 97 per 1000 births in 1913, and an average of 94 per 1000 births registered during the ten years 1904–1913. These figures are a good deal lower than those for England and Scotland. On the other hand, the infant mortality in certain town areas is very high. The decline in the number of primary vaccinations is very considerable.

[1] Cd. 7991. Price 2*s*. 1*d*.

Rival Dispensary Doctors.

A ludicrous situation has arisen at Cootehill, co. Cavan. The Cootehill guardians a few weeks ago gave Mr. C.W. McQuaid his annual leave, appointing Dr. J. J. O'Reilly as his substitute, but the Local Government Board declined to sanction his election as he was medical certifier under the Insurance Act for Cootehill and other districts. Dr. W. W. Moore was then appointed by the guardians, but at their next meeting a number of guardians who were not at the former meeting reappointed Dr. O'Reilly, with the result that later both doctors attended the dispensaries.

The Payment of Civil Medical Men in Attendance on Soldiers.

After considerable discussion it was decided by the Belfast board of guardians at their meeting on August 10th to allow the medical visiting staff who are attending soldiers in the military hospital established in connexion with the Belfast Union Infirmary 3*s*. 6*d*. a head per week. It was said the Government allowed 17*s*. 6*d*. a head for the patients, which included 7*s*. for medical attendance. At the Belfast military barracks civil doctors are employed and paid one guinea per day for their services; while, on the other hand, at the Ulster Volunteer Hospital, the Mater Infirmorum Hospital, and at the Royal Victoria Hospital, at each of which large numbers of wounded soldiers are treated, no doctor is paid anything.

Death of Mr. Jeremiah Cotter, M.D., M.Ch.R.U.I., F.R.C.S. Irel.

It is with much regret I have to record the death of Dr. Cotter, who was one of the best-known practitioners in Cork. He was a member of the governing body of University College and senior surgeon to the Cork North Infirmary. He was one of the most genial and amiable of men and a universal favourite with the people of Cork. His death occurred under tragic circumstances. He was enjoying a well-earned holiday at his country residence, and on August 12th he and Mrs. Cotter gave a picnic to some friends on an adjacent strand. When returning home he was the last to leave. Soon afterwards one of the guests saw him lying at the foot of a cliff, down which he had fallen, a distance of some 35 feet. On reaching him he was found bleeding and bruised, but conscious. However, coma soon set in, and within a few hours he was dead. He had been in failing health for some time past, and everything points to his having had an attack of cerebral hæmorrhage when walking near the edge of the cliff.

Heavy Rainfall in Belfast.

At the beginning of July of this year the Belfast water commissioners had a shortage in their water-supply, as compared with the corresponding date of 1914, of over 73½ million gallons; but such has been the extraordinary rainfall in the neighbourhood of their reservoirs at Old Park, Belfast, and at Woodburn, Carrickfergus, during July and the first half of August that up to the 15th they had actually a balance of almost 700 million gallons in favour of this year; and, since the last date, two extremely wet days have added to the above balance over 440 million gallons. Not for years have there been such torrential rains in Belfast. During July rain fell at Old Park, Belfast, to the extent of 4·10 in., twice the amount of 1914, while there were 21 days on which rain fell; at the same place, up to August 15th, there was a rainfall of 3·19 instead of 1·50 in., as in 1914.

August 30th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

War Relief Work in Bombay.

THE audited statement of accounts from April 1st to June 30th, 1915, of the Bombay branch of the Imperial Relief Fund shows receipts amounting to Rs. 1,35,455 and expenses amounting to Rs. 1,85,000. The following amounts were remitted to the Red Cross Funds: The Serbian Red Cross, £1500; Montenegrin Red Cross, £250. Local relief of Rs. 4553 was distributed. The management of hospitals was under the guidance of Mr. P. R. Cadell. The Lady Hardinge War Hospital at Bombay and the Bombay Presidency General Hospital at Alexandria both continued to do splendid work. The former since the opening in December has treated 1221 cases. The Alexandria was converted into a European general hospital for the treatment of British and French troops, as the number of the Indian sick and wounded has been very small. Splendid voluntary work has been done by the St. John Ambulance Brigade in connexion with the embarkation of the wounded, and the motor ambulances were of great service in this connexion.

New Hospital for Dhrangadra.

The interesting ceremony of declaring open the Prankunverba Zenana Hospital at Dhrangadra, erected in memory of the late Jamnagrwala Rani Saheb, was recently performed by His Highness the Maharana Rao Saheb in the presence of a large gathering.

Retirement of Colonel C. J. Bamber, I.M.S.

Colonel C. J. Bamber, inspector-general of civil hospitals in the Punjab, retired from the service on July 12th on attaining the age of 60. He has, it is understood, offered his services at the front. He has been succeeded by Colonel H. Hendley, Deputy Director, Medical Services, at Army Headquarters.

The Work of the Pasteur Institute.

The annual report of the Pasteur Institute of South India for the year ending Feb. 28th has just been issued by Major J. W. Cornwall, I.M.S., director. It shows that there has been a slight fall in the number of patients treated compared with the two previous years. Major Cornwall has very interesting suggestions to make regarding the infectivity of human beings to rabies. In the first place, he disposes summarily of the idea that a European person is less susceptible to hydrophobia than an Indian. It is true that it is to the Indian population chiefly that rabies is a danger, but this is because a European is less exposed to bites by rabid animals by reason of the different conditions under which he lives. A question that occasioned a good deal of discussion and research is that of the conditions governing the infectivity of rabies. Instances have been recorded of a number of persons being bitten by undoubtedly rabid animals without hydrophobia supervening, and the question naturally presents itself, Why is this so? Are there stages at which the saliva of a rabid dog is more infectious than at other times? Laboratory tests have been fruitless, and, as Major Cornwall says, some factor which we have no means of ascertaining determines whether or not virus shall be contained at a particular moment in the saliva of a rabid animal.

Plague in India.

India is now once more almost completely clear of plague. The figures issued for the week ending July 10th show a total of only 385 deaths in the entire country, of which 161 occurred in the Bombay Presidency, 152 in the Punjab, 46 in Burma, and 18 in Mysore State. The whole of the rest of India put together only had nine cases with eight deaths.

The Deputy Director of Medical Services in India.

Colonel T. E. Dyson, I.M.S., Assistant Director of Medical Services, Burma Division, succeeds Colonel H. Hendley as Deputy Director of Medical Services in India. He was formerly Sanitary Commissioner in Bombay.

The St. John Ambulance Red Cross.

His Highness the Maharaja of Balrampur has just made a donation of Rs. 2000 to the St. John Ambulance Red Cross War Fund for the purpose of endowing a bed for one year in the St. John Ambulance War Hospital at Dehra Dun. His Highness has already endowed two beds in the St. John Ambulance Brigade Hospital which has been organised by the Order of St. John and is now serving somewhere in France.

Snake-bite.

The Return just issued by the Government of Bombay showing the measures taken to exterminate wild animals and snakes contains some very interesting statistics. Considering that during the year under review the mortality among human beings from snake-bite rose from 1406 to 1608, there can be no doubt of the importance of the subject. It is just about a year since Government offered a reward for snakes killed in certain talukas, but it is too soon yet to see whether that will lead to any improvement; at the end of this year, if there is no report of a considerable rise in the number of snakes killed, some other measures will have to be taken for their reduction. The report states that the Lauder Brunton lancet was used in 82 cases and there are said to have been 22 cases of recovery. The figures are worse than useless, for the identification of the snake was not trustworthy; and advocates of the method may make use of the statistics without taking due account of the possibility of error. The positive evidence in support of the efficacy of the lancets is small.

August 2nd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Asepsis: Sun Baths and Open-air Cure.

Dr. Robert Sorel, writing on this subject, expresses the opinion that the surgeons with the forces should rely more than they do upon the efficiency of the general organism to fight against infection; chemical agents, he suggests, too often add their intoxication to the microbial toxins. He bases his advice upon a lengthy experience in the hospitals of Monte Carlo and Nice, and he thinks that the methods there adopted are capable of rendering useful service at the present time. The great majority of the patients who arrive at the hospitals in the rear have wounds more or less gravely infected. Dr. Sorel abjures the use of iodine, alcohol, sublimate, formol, or carbolic acid in these circumstances, taking care, however, to put on sterilised gloves in dressing the wound. The previous dressings are removed with forceps which have been boiled, a compress of sterilised gauze is picked out of the autoclave, and the edges of the wound are washed, but "in order not to destroy the delicate cells which supply the repairing material" he does not employ lavage, except in the case of perhaps the first dressing, when he allows it to expel foreign bodies and blood clots. Likewise he recommends the suppression of wicks unless great care is taken to place them where no blocking up of drainage can occur. If the edges of the wound are irritated by pus he coats the skin with vaseline. But he claims to derive great benefit for his patients from the sun cure, working on the lines of the studies presented to the last Congress of Thalasso-therapy by Dr. Poncet, of Lyons. He advises the exposure of the wound to the radiations of the sun for five minutes; then the surface exposed is extended and the time of exposure progressively lengthened. The patients will easily bear in summer an exposure of 1½ hours of the cure. When a lesion of bone is in question, to the local cure must be added the stimulation produced by a general treatment. Also for bone wounds of the upper limbs the author causes the upper limbs and the trunk to be exposed; for the lower limbs both legs and thighs. The serous oozing which is abundantly caused by solar therapy expels gently from the interior to the exterior ragged necrosed masses of tissue. This movement should prevent infection from the exterior to the interior. After the sun cure he prolongs the stay in the open air without any dressing of the wounds, and he states that he has never seen any trouble arise. It is sufficient to cover the wound with light gauze to protect it from flies and dust. For deep-seated infections he incises and drains with indiarubber tubes.

Conservative Surgery in Extensive Traumatism.

From the beginning of the war the well-known surgeon, M. Bilhaut, has taken the opportunity of observing closely the effects of projectiles on the skeleton from the point of view of the motility of the body. His advice as to the value of conservative surgery in various lesions of the skeleton is founded on experience, but the circumstances in which his elaborate procedure can be adopted are far from universal. He preserves the periosteum as much as possible in sequestrotomy, but this presupposes an operation of election, for in many lesions this would be dangerous. In resections he preserves as much as he can of the periosteal-capsular ligaments, not hoping, he says, to reconstitute articulations in any and every case, but in order to consolidate the results. He is of opinion that there should be no haste to amputate or disarticulate; on the contrary, a more conservative and preservative treatment should be adopted which will be otherwise profitable in results. Up to the present time, of 2500 wounded that M. Bilhaut has had in his hospital he has not performed a single amputation or disarticulation.

August 30th.

CONSUMPTIVE CASES AND LIGHT WORK.—At a conference held at Cambridge in connexion with the annual meeting of the National Insurance Association, and at which representatives of all the friendly societies having branches in Cambridgeshire and the Isle of Ely were invited to be present, the societies were strongly urged to change their rules for the benefit of their consumptive members. Mr. P. C. Varrier-Jones addressed the conference at length upon this subject, pointing out that the practice of forbidding a member to do any work at all when drawing sick pay was very prejudicial to the health of consumptive members who would derive benefit from mild exertion, from having their minds occupied, and from the satisfaction of making a little extra money which could be spent, if desired, on nutrition. He laid stress upon the fact that exercise or work of a graduated character was in every sense scientific treatment of the disease. He asked if the policy of the societies was not, in such circumstances, foolish and one which rendered futile the efforts of those striving to combat tuberculosis, and he claimed that the alteration of rules which he suggested would be in the interests of the societies and for the benefit of the nation, as well as for that of the members affected. Professor G. Sims Woodhead emphasised the points made by Mr. Varrier-Jones with the aid of lantern-slides, and warmly supported his proposals. Representatives of the Oddfellows, Foresters, and other societies spoke, some pointing out the difficulties involved from the point of view of friendly society administration. One speaker observed that his society had communicated with the Insurance Commissioners on the subject, and had had the reply that there was no objection to the provision by the societies of light employment for consumptive insured persons "provided that it was unremunerative." It will be interesting to see in a few years' time whether the regulations referred to survive, and whether the objection will remain to a man who can earn a little, but not his normal wages, being allowed to do so.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Surgeon Harold Gordon Truscott Major has been placed on the Retired List (dated August 20th).

The undermentioned have been granted temporary commissions as Surgeons in His Majesty's Fleet:—Dated August 16th: D. Ll. Lewis. Dated August 19th: D. G. Boddie. Dated August 20th: A. T. McDonald.

The undermentioned have been granted commissions as Surgeons for temporary service in His Majesty's Fleet:—Dated August 16th: Wilfred Egerton Milligan, Roland Sells, and Charles Evans Jenkins. Dated August 17th: David Andrew Imrie and Cyril Oscar Howe Jones. Dated August 21st: W. H. Pickup and H. S. Jeffries (with seniority of August 24th).

Surgeon Probationer (R.N.V.R.).—E. P. Hicks has been transferred to R.N.A.S. as Probationary Flight Sub-Lieutenant for temporary service, with seniority of August 23rd.

The following appointments have been notified:—Fleet-Surgeons: R. H. Hughes to the *Victory*, additional, for disposal; A. J. Pickthorn, lent to the *Kinfauns Castle*, on paying off, for duty with navigating party; J. F. Hall to the hospital ship *Soudan*, in charge, vice Collingwood; G. T. Collingwood, M.V.O. to R.M. Division, Portsmouth, vice Hall; E. T. Burton to the *Victory*, for R.N. Division Camp, Blandford, vice Hickson; H. R. Gardner to the *Nottingham*, vice Burton; and A. S. Mackie to the *Pembroke*, additional, for disposal. Staff Surgeons: B. Pick to hospital ship *Somali*, vice Rowan-Robinson; and L. C. Rowan-Robinson to the *Ganges*, additional, for Shotley Sick Quarters, vice Pick. Surgeon: G. A. S. Hamilton to the *Victory*, additional, for disposal. Temporary Surgeons: A. L. Dykes to the *Victory*, additional, for R.N. Division; C. H. Gould to the *Vivid*, additional; A. T. McDonald to the *Victory*, additional, for Haslar Hospital; D. G. Boddie and W. H. Pickup, both to the *Vivid*, additional, for Plymouth Hospital; H. Williamson to the *Europa*; F. C. S. Broome to *Victory*, for R.N. Barracks, vice Hickson; and G. N. Martin to the *Pembroke*, additional.

ROYAL NAVAL VOLUNTEER RESERVE.

Staff-Surgeon: J. K. Murphy to the *Vivid*, additional, for Plymouth Hospital. Surgeon: T. Turner to the *Pembroke*, additional, for Chatham Hospital. Surgeon Probationers: R. Walker to the *Shark*, vice Wylie. F. N. T. Flintan and D. I. L. Macaulay have been entered for temporary service.

ARMY MEDICAL SERVICE.

Temporary Major Alexis Thomson, from Royal Army Medical Corps, to be temporary Colonel (dated August 20th).

ROYAL ARMY MEDICAL CORPS.

The undermentioned to be temporary Lieutenant-Colonels:—Dated August 10th: Temporary Honorary Lieutenant-Colonel Percy Sargent and temporary Honorary Major Gordon M. Holmes.

Temporary Major C. Gordon Watson to be temporary Honorary Lieutenant-Colonel whilst serving with No. 1 British Red Cross Hospital (dated August 11th).

Major Frederic W. Lamballe, from the Half-pay List, to be restored to the establishment (dated August 19th).

Ernest Frederic Eliot to be temporary Major (dated April 11th) (substituted for the notification of June 23rd). William Forsyth Jones to be temporary Major whilst employed with the Brook War Hospital (dated June 12th). John Harley Brooks to be temporary Major whilst serving with the Mile-End War Hospital (dated August 12th).

Alexander Robert Ferguson to be temporary Major (dated August 12th).

The undermentioned to be temporary Captains:—Dated August 3rd: Henry Richard Ludlow Joy. Dated August 6th: Henry William Marett Tims. Dated August 7th: Harold John Hutchens, D.S.O., late Second Lieutenant, Officers Training Corps, and Captain, Australian Army Medical Service. Dated August 24th: Temporary Lieutenants Henry William Drew and William G. Davies.

Temporary Captain W. W. C. Topley relinquishes his commission (dated August 8th).

The undermentioned temporary Captains relinquish their commissions:—Robert S. Cocke (dated August 4th) and Ewen C. Stabb (dated August 22nd).

Second Lieutenant George Min Adam, from 5th Battalion (Angus and Dundee) (Territorial), The Black Watch (Royal Highlanders), to be temporary Lieutenant (dated April 7th).

The undermentioned to be temporary Lieutenants:—Dated June 10th: Charles Richard Wills. Dated July 13th: William Young. Dated July 24th: Arthur Ronald McLachlan, George Kennedy, and George Adam. Dated August 1st: Saul Hyman Harris, Matthew Dobbs, Adam Cowes, Austin Lewis Badcock, James Campbell, Walter Sansom, and Eric Newton. Dated August 2nd: Oscar Meyer de Jong, William Henry Frederick Fenn Godwin, David Aneuryn Evans, John Chadwick Hindley, Arthur Lea Martyn, James Ronald Polson, Francis Charles Ellison, Edwin Montgomery, Arthur Gruchy Clark, David McNeill, William Martin, Robert Stuart Gibson, John Stirling Gilchrist, Dugald Stewart Campbell, John Daglish Watson, John Mandeville Macfie, John King Rennie, Isaac Mandale Byers, William Graeme Denroche, John Vincent Grant, Alfred Skirrow Robinson, Harry Gordon Parker, Alfred Howard Parkinson, Thordur John Wilhelm Swinburne, Frederick Langton Webster, Noel John Hay Gavin, Ernest Francis Bashford, William Kelley-Patterson, Richard James Harley, William Edwin Passmore, Lister Gibbons, Charles Albert Wickham, Martin Clover, George Wilfred Hardy, Douglas Reid Alexander, Reginald Edward Ingram-Johnston, and Ralph Boutwood. Dated August 3rd: Arthur William Johnson, Richard Cruikshank Poyser, William Pridham Wippell, Richard Leonard Bealy-Smith, Alexander Scott, David McFarlane, Percy Howard Day, Arthur George Nelson Goldney, and William John Knight. Dated August 4th: Charles de Zouche Marshall, William Cunningham, James Alexander Leiper, William Swanson Sprent, and George Gibson Lyttle. Dated August 5th: Lieutenant Victor Thomas William Eagles (from Royal Field Artillery), James Matthew Wishart, Ian Alexander Clarke, Peter Cousin Davie, Alexander Fleming Millar, and George Whitson Middlemiss. Dated August 6th: James Davidson, Stuart Jasper Cowell, Hugh Llewellyn Glyn Hughes, John Struan Alexander, and Thomas William Sheldon. Dated August 7th: John Crawford Knox, Joseph Alan Longley, Frederick William Hutchinson Hutchinson, Michael Coghlan, Paul MacDonald Little, and George Maudsley Jackson.

The undermentioned to be temporary Honorary Lieutenants:—Dated August 7th: Allan Hawkins Morley. Dated August 9th: Thomas Walter Melhuish and William Durward Cruickshank.

Francis Percy Young to be temporary Honorary Lieutenant whilst serving with No. 1 British Red Cross (The Duchess of Westminster's) Hospital (dated July 1st).

Alfred Jackson to be temporary Quartermaster, with the honorary rank of Lieutenant (dated August 16th).

The undermentioned temporary Lieutenants relinquish their commissions:—Dated July 13th: Philip C. P. Cloake on account of ill-health. Dated August 6th: Maitland Radford, Gilbert C. Chubb, Robert G. Brown, Alma P. Ford, Frederick G. Chandler, George C. Metcalfe, and Arthur G. H. Lovell. Dated August 8th: Thomas F. Wyse. Dated August 10th: Charles S. Atkin, Cecil K. Attlee, Edward N. Graham, Neville C. Wallis, and John Arthur West. Dated August 11th: Thomas A. Jones, Andrew B. Lindsay, Charles W. Forsyth, William A. Wilson-Smith, and Henry G. Greaves. Dated August 14th: George H. Rodolph. Dated August 15th: Stewart R. Douglas. Dated August 20th: James Hamilton Fleming on account of ill-health.

The appointment to a temporary Lieutenancy of Arthur Geoffrey Owen is cancelled.

The appointment of Wilfred John Pearson to the honorary rank of Lieutenant is dated March 12th.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Temporary Lieutenant Kenneth Alexander Maclean, from Royal Army Medical Corps, to be Captain (dated August 16th).

Lieutenant David M. Marr to be Captain, with seniority next below W. Walker.

The undermentioned Lieutenants (on probation) are confirmed in their rank: Douglas C. Pimm, Norman L. Reis, William J. Dowling, Frederick R. S. Shaw, Cyril E. H. Gater, Ribton G. Blair, George Stanton, John D. Proud, and John G. Hendry.

To be Lieutenants (on probation): Ex-Cadet Alan Rupert Laurie, from the Edinburgh University Contingent, Officers Training Corps, and Ex-Cadet John Taylor Scrogie, from the Aberdeen University Officers Training Corps.

Captain Owen Wilson resigns his commission.

TERRITORIAL FORCE.

Army Medical Service.

Major Augustus A. W. Merrick, from the 3rd West Lancashire Field Ambulance, to be Deputy Assistant Director of Medical Services, 2nd Mounted (Reserve) Division (dated August 14th).

Royal Army Medical Corps.

1st London (City of London) Field Ambulance: Captain Donald S. Sutherland to be temporary Major.

1st Eastern General Hospital: Eric Cuthbert Crichton to be Captain, whose services will be available on mobilisation.

2nd London (City of London) General Hospital: Robert Jones Whitla Alexander Cushing to be Lieutenant.

1st Scottish General Hospital: Frederick William Campbell Brown to be Lieutenant.

London Mounted Brigade Field Ambulance: Captain Hugh S. Beadles to be temporary Major.

2nd South Midland Mounted Brigade Field Ambulance: To be Captains: Lieutenant Alexander Rodger and Lieutenant John C. S. Dunn.

1st West Lancashire Field Ambulance: Captain Richard S. Taylor to be temporary Major. Captain William H. Broad, 6th (Rifle) Battalion, The King's (Liverpool Regiment), to be Captain (temporary).

2nd Southern General Hospital: Major Arthur B. Prowse to be temporary Lieutenant-Colonel.

1st London (City of London) Sanitary Company: Lieutenant James E. Wilson, from the 3rd North Midland Field Ambulance, to be Lieutenant.

1st Highland Field Ambulance: Alfred Bell Whitton (late Lieutenant-Colonel, 6th Battalion, Gordon Highlanders) to be Captain (temporary). Captain Arthur Kellas to be temporary Major.

2nd Lowland Field Ambulance: Harry Taylor Findlay to be Lieutenant.

3rd West Riding Field Ambulance: Captain William J. Gray, from Attached to Units other than Medical Units, to be Captain.

2nd Wessex Field Ambulance: Major Harry C. Parsons to be temporary Lieutenant-Colonel.

4th London General Hospital: Major William A. Turner is seconded.

Wessex Divisional Sanitary Section: Arthur Ernest Bonham to be Lieutenant.

3rd North Midland Field Ambulance: Captain Bertram M. Footner, from Attached to Units other than Medical Units, to be Captain.

1st Welsh Field Ambulance: John Cook (late Second Lieutenant, 4th Welsh Brigade, Royal Field Artillery), to be Captain (temporary).

3rd Western General Hospital: John Thomas Williams to be Lieutenant.

2nd London Sanitary Company: Serjeant Thomas Jenkins Murray, from 3rd North Midland Field Ambulance, to be Lieutenant.

Notts and Derby Mounted Brigade Field Ambulance: David William Griffiths to be Lieutenant.

Lowland Mounted Brigade Field Ambulance: The undermentioned Lieutenants to be Captains: Andrew R. Muir, Hugh Forrest, Andrew M. Young, and Edward N. Thomson.

2nd London (City of London) Field Ambulance: Transport Officer and Honorary Lieutenant Arthur D. Don resigns his commission.

Highland Mounted Brigade Field Ambulance: The undermentioned Lieutenants to be Captains: George G. Middleton, Evan A. Mackenzie, and Thomas E. Roberts.

South-Western Mounted Brigade Field Ambulance: Lieutenant Philip W. Mason to be Captain. Lieutenant Harold Burnet Porteos to be Captain. Lieutenant Bertram Michell Young to be Captain.

Yorkshire Mounted Brigade Field Ambulance: Lieutenant William H. N. White to be Captain.

Lowland Field Ambulance: Lieutenant Robert A. Lennie to be Captain. Lieutenant Colin C. Philip to be Captain. The undermentioned Lieutenants to be Captains: James R. Menzies, William H. Armistead. James Stark Linton to be Quartermaster, with the honorary rank of Lieutenant.

Eastern General Hospital: The undermentioned Lieutenants to be Captains: John H. Owens, Ffrangcon Roberts.

London Sanitary Company: Lieutenant Vincent P. Norman to be Captain.

West Riding Casualty Clearing Station: The undermentioned Lieutenants to be Captains: Robert G. Dixon, Hubert W. Symons, Frederick P. Gibson, Hubert T. Bates, Jeffrey W. Malim, David R. Cramb, George P. P. Clapham, Arthur S. Hebblethwaite, and Charles M. Gozney.

South Wales Mounted Brigade Field Ambulance: The undermentioned Lieutenants to be Captains: Archibald J. Campbell, Ernest L. Sandiland, and Martin Scales.

Scottish Horse Mounted Brigade Field Ambulance: Cadet Francis Murray Halley, from the Edinburgh University Contingent, Senior Division, Officers Training Corps, to be Lieutenant.

East Anglian Field Ambulance: Major Henry A. Rudyard, from Attached to Units other than Medical Units, to be Major. Major Henry A. Rudyard to be temporary Lieutenant Colonel.

Highland Field Ambulance: Major James Robertson to be temporary Lieutenant-Colonel.

East Lancashire Field Ambulance: Ernest Lionel Forward to be Lieutenant. Arthur William Havard, to be Lieutenant.

London Field Ambulance: Lieutenant Charles Eustace Williams, from London (City of London) Field Ambulance, to be Lieutenant. William Morgan Langdon to be Lieutenant.

South Midland Field Ambulance: William George McKenzie to be Lieutenant.

Northumbrian Field Ambulance: Patrick Joseph Sheedy to be Lieutenant.

Wessex Field Ambulance: Lieutenant Angus Cameron, from Attached to Units other than Medical Units, to be Lieutenant.

London (City of London) General Hospital: The undermentioned Lieutenants to be Captains: Alfred B. P. Smith, Lionel G. Crossman, Martin W. K. Bird, and Arnold W. Stott, and to remain seconded. The undermentioned Lieutenants to be Captains: Cyril E. Petley, Leonard Milton, Herbert Sharpe, and Kenneth B. Clarke.

Northern General Hospital: The undermentioned Lieutenants to be Captains: Frederick J. Nattrass and Sydney Thompson. To be Lieutenant: Ethelbert Rest Flint.

Western General Hospital: Edward Moir to be Captain, whose services will be available on mobilisation.

London (City of London) Sanitary Company: To be Lieutenants: John Oglethorpe Wakelin Barratt, Major Greenwood, Cadet George Leslie Matthews, from the University of London Contingent, Senior Division, Officers Training Corps; and Ernest Romney Matthews.

Welsh Field Ambulance: Captain Henry J. Dunbar to be temporary Major. Lawrence Stephenson to be Quartermaster, with the honorary rank of Lieutenant.

Supernumerary for Service with the Officers Training Corps: Cadet Ernest William Walker, from the Oxford University Contingent, Senior Division, Officers Training Corps, to be Lieutenant, for service with the Medical Unit of that Contingent.

Attached to Units other than Medical Units.—To be Majors: Captain Thomas D. Laird and Captain Thomas Douglas Brown. The undermentioned Lieutenants to be Captains: Hugh A. McLean, Alexander Ambrose, Ernest S. Stork, William A. Robertson, Alexander G. V. Van Someren, Maurice C. Anderson, Reginald D. Gawn, John C. McKenzie, George H. Dominy, John A. Thomson, Archibald N. S. Carmichael, Ernest B. Keen, Harold F. L. Hugo, John W. M. Jamieson, Thomas Rhind, William H Date, Edward L. Martin, John J. Weaver, Samuel Rutherford, Hugh G. Bruce, and James McGavin Deuchars.

Captain Thomas E. Roberts, from the Highland Mounted Brigade Field Ambulance, to be Captain.

Lieutenant Sydney Oliphant Bingham, from the 14th (Reserve) Battalion, The Sherwood Foresters (Nottinghamshire and Derbyshire Regiment), to be Lieutenant.

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

The current issue of this journal, dated May, gives first place to an experimental study of the prevention of "frost-bite" and other effects of cold ("froidure" or "frigorism"), by Professor Sheridan Delépine. His inquiry deals with the effects of exposure to cold, with the factors influencing those effects, and the procedure necessary for protection. An article on the same subject appears under Professor Delépine's name in THE LANCET of Feb. 6th. The Substitutes for Salvarsan and Neosalvarsan is the subject of a paper by Major E. G. Ffrench, Identification of the Meningococcus is dealt with by Major M. H. Gordon, and X Ray Work with the Mediterranean Force by Lieutenant Harold Mowat. Colonel R. H. Firth's articles are always interesting as well as informative, whether they deal with metaphysics, as frequently they do, or commonplace matters of everyday life. This month he reviews our present position in regard to hormones and vaccines. Vaccine, he thinks, is still on its trial, though the future holds out definite promise. "The present methods may be crude and often misdirected, yet practice and research may improve them and give them the precision they now lack."

DEPUTY SURGEON-GENERAL A. H. BEAMAN, I.M.S.

Deputy Surgeon-General Ardern Helme Beaman, who died recently at the residence of his son-in-law, Lieutenant G. F. Lefroy, at Barnstaple, in his 87th year, was formerly in the Indian Medical Service, and served through the Indian Mutiny. He leaves a large family of children, which includes five sons in the Army and Navy, and Mr. Justice Beaman, judge of the High Court of Bombay.

DONATIONS AND BEQUESTS.—The late Hon. Maude A. Stanley has left by will £450 to the New Hospital for Women, Euston-road.—By will the late Mr. Thomas Thornber, of Burnley, has bequeathed £5000 to the Burnley Victoria Hospital.—The late Mr. T. Bedford Bolitho, J.P., D.L., of Trewidden, near Penzance, has bequeathed £1000 to the West Cornwall Infirmary and Dispensary, Penzance; £1000 to the Edward Bolitho Convalescent Home (founded and endowed by him); and £200 to the Plymouth Eye Infirmary.—Miss Maria Jenkin, of "Woolton," Exeter, has bequeathed £1000 to the Royal Devon and Exeter Hospital and £500 to the Exeter Dispensary.

Correspondence.

"Audi alteram partem."

MEDICAL STUDENTS AND COMBATANT COMMISSIONS.

To the Editor of THE LANCET.

SIR,—The following are extracts from a letter I have just received from a medical student on the above subject:—

"I am writing on behalf of my fellow-students to thank you for all the trouble you have taken. We feel somewhat surprised at the reply you have received from the War Office; for there is a greater demand now for medical men, both military and civil, than there has ever been before, and unless the usual supply of students is kept up I fail to see how they will be obtained, for the longer the war lasts and the larger our army becomes the more urgent will be the call for medical men. One has to bear in mind that a doctor cannot be trained under five years, so that when those who are now in their final years are qualified there will be a scarcity for some years to come unless the supply of students is kept up."

"The hospitals are now urgently in want of senior students to fill the posts of those who have just become qualified."

"In the army we deal with men by the million, so surely the few hundred men who are now engaged studying in different parts of the country for the medical profession would be far more useful if they continued with their own work rather than waste two or three years of their training, for the doctor is quite as essential for the welfare of this country as the soldier or sailor, and, like the latter, the medical profession must have recruits."

The foregoing appears to me to put the case very clearly and logically. The Government have admitted the mistake they made in the early days of the war in allowing munition workers to proceed to the front. To-day's papers announce that they are taking measures to prevent a repetition of this mistake in the case of skilled agricultural labourers. Surely the same applies with equal, or even greater, force to those who are to fill the ranks of the medical profession. In your leading article this week you point out the increasingly numerous ways in which medical men can be of service to the State and to the fact that their numbers are already disquietingly low.

I am, Sir, yours faithfully,

W. D. HALLIBURTON.

King's College, London, August 27th, 1915.

THE REGISTRATION OF CANADIAN MEDICAL PRACTITIONERS.

To the Editor of THE LANCET.

SIR,—I am directed to state that Part II. of the Medical Act, 1886, has by an Order of His Majesty in Council, dated August 12th, been extended to the Province of Ontario. I am, therefore, in a position to inform you of the terms of the resolution passed by the Executive Committee as follows:—

"That any person who holds the Licence or Membership of the College of Physicians and Surgeons of Ontario, granted after examination in medicine, surgery, and midwifery, together with the licence to practise in the Province, shall be entitled to be registered in the Colonial List of the Medical Register," provided he satisfies the Registrar regarding the other particulars set forth in Part II. of the Medical Act, 1886. Degrees in medicine granted by the Queen's University, the Western University, and the University of Toronto may also be registered as additional titles provided they are registered in Ontario.

I am, Sir, yours faithfully,

NORMAN C. KING,
Registrar.

General Council of Medical Education and Registration of the United Kingdom, Oxford-street, W., August 27th, 1915.

HOSPITAL TREATMENT *V.* LUNACY TREATMENT.

To the Editor of THE LANCET.

SIR,—The difficulty of getting alienists to address themselves to the real problem of the hospital treatment of preventable cases in mental disorder is well illustrated by the correspondence upon the subject appearing in your issue of July 31st. The question of treatment is not at issue. It is one of policy—viz., the classification of mental cases into two great divisions, preventable on the one hand, and confirmed or dangerous on the other. To the alienist the ideal is to bring within his scope the whole field of mental disorder. Early and preventable cases inspire him. He is conscious of his service and power when such cases are brought to him for treatment. He ignores the very essential fact that to every case, whether early or late, which he treats in an asylum he adds the stigma of insanity. If it were not for this there would be no problem to face. The question is, How can early and preventable cases be dealt with without branding the patient and saddling him with a disability that must remain with him for life, and even be handed down to his posterity? The popular test of insanity is commitment to an asylum. "He has been in an asylum," "His mother was in an asylum," "His father was in an asylum," are the popular phrases by which the stigma is expressed, and to this comment upon an inmate, however brief his detention may have been or trivial his mental disorder, there is no possible reply or explanation to satisfy the popular mind.

It is already a notorious fact that a far larger proportion of our soldiers in the field are suffering from nerve-wrack and mental shock than in any preceding war. It is equally notorious, happily, that these symptoms are generally temporary and capable of complete removal by appropriate treatment. It would be a cruel wrong to brand any recoverable case with the stigma to which I have referred, and, in addition, to weaken his chance of employment in the future. Now the problem before the War Office is how to treat these soldiers without contact, either in appearance or in reality, with any institution associated with lunacy or even with mental experts whose treatment of the case, or whose management of the institutions to which these soldiers are sent, may justify in the popular mind the painful association that an asylum entails. I have said that the ideal of the alienist is to bring all classes of mental disorder within his purview. The ideal for which a large number of Members of the House of Commons, and many outside the House who are associated with them, stand is entirely opposed to this. It involves little or no change of treatment. It is a question of administrative policy. In this ideal two domains are recognised in the field of mental disorder, *the Hospital domain* and *the Asylum domain*. The characteristics of the former are the characteristics of any special department in general hospital practice—voluntary admission, voluntary residence, early and preventive treatment by medical specialists, absence of repugnance to patient or friends, and freedom from all suspicion of stigma. The characteristics of the asylum domain are: the strictest safeguards against unnecessary internment such as are implied in legal certification, compulsory incarceration and detention, and the inevitable and ineradicable stigma associated with the painful facts of compulsory detention and loss of liberty.

Now between these two domains, according to this view, there is a great gulf fixed. They should be kept separate and distinct; and rarely, if ever, should an alleged lunatic be committed to an asylum until he has passed through, and not profited by, preventive treatment in the hospital domain.

A very grave difficulty at present exists in the absence of such a hospital alternative. At present, when a person suspected of mental disorder is being examined, the examining physician must either certify insanity or freedom from insanity. If he certifies insanity and the patient is committed, the doctor accepts the grave responsibility of adding to that person and even to his posterity the stigma of insanity. If, on the other hand, he certifies freedom from insanity, he accepts perhaps a graver responsibility—that of giving a person his liberty who might commit suicide or homicide. It is not uncommon for the doctor to accept the lesser responsibility and certify a doubtful or difficult case. If a third alternative existed, and a patient could be received into a preventive hospital for diagnostic observation and treatment there is not the slightest doubt that a large number now certified as insane would be given the advantages which such a scheme would provide. If hospital provision such as I have described existed, the area of certifiability would be immediately diminished, and a large number would escape detention and escape also the stigma attached to it. Asylums would then be relegated to their proper function of providing for confirmed or dangerous cases, and our best alienists would come into the hospital domain, enjoy the status, and do the very excellent kind of work that is now done by the specialists in our other great hospital departments. For this complete detachment of the hospital sphere from the asylum sphere in the treatment of those suffering from mental disorder many Members in the House of Commons have been contending for some time, and alienists can at this opportune moment serve the purpose of a great and much needed reform if they lend their aid to a scheme that will protect the most afflicted of our people, and at the same time promote their own status and usefulness.

I am, Sir, yours faithfully,

House of Commons, August 14th, 1915. W. A. CHAPPLE.

FUNCTIONAL DISEASES OF THE VEINS.

To the Editor of THE LANCET.

SIR,—Dr. Harry Campbell's excellent work on blushing has given him a high place amongst the authors who have studied vaso-motor phenomena. So highly do I esteem this book that I bought a copy of it to have it constantly by me when writing my paper on Functional Diseases of the Arteries. Any opinion that he puts forward is deserving of the most careful consideration, and it is with much hesitation that I venture to differ from him in regard to the causation of cyanosis, either localised or general.

I quite agree with him in believing that the whiteness of the skin, either from exposure to cold or in Raynaud's disease, is due to combined contraction of the arterioles and venules, but the blueness is, I think, due to distension and not to spasm of the venules. I believe that the distension probably depends upon a localised asphyxia of the venules. My old master, Professor Ludwig, used to say that in making experiments with artificial circulation the blood-vessels (without distinguishing between the arteries and veins) contract when the blood is well arterialised and dilate when it is venous. In some experiments which I made on the circulation of the blood through the liver I was able to confirm these statements. As I there said,[1] "Sometimes the blood would flow very easily through the liver, would, indeed, pour out from the hepatic vein in a full stream, as if no obstacle whatever had been presented to its flow through the hepatic capillaries. At other times, however, the flow would be slow and scanty, the blood evidently meeting with great resistance in the capillaries. These two conditions were sometimes found in the same liver at different periods of the experiment, and they appeared to depend to a considerable extent upon the quality of the blood which was circulating." That the veins have a very considerable contractile power is at once evident if one looks at one's own hands, for sometimes they are small, contracted, and almost disappear, while at others they are full and turgid. It is when there is backward pressure on the venules from such conditions as mitral constriction or mitral regurgitation, that the veins become most swollen and cyanosis appears, though both the cyanosis and bulbar condition of the fingers are more marked in congenital than in acquired heart disease. The relaxation of veins must not be dismissed, because the vena cava and pulmonary veins have both an independent power of rhythmical contraction, and it is complete relaxation of the walls of the vena cava and its tributaries which cause the complete failure of circulation and consequent death in Goltz's well-known experiments on shock.

The subject is, however, so important and so difficult that both I and others will be very glad indeed if Dr. Harry Campbell will bring forward his arguments in favour of venular spasm.

I am, Sir, yours faithfully,

LAUDER BRUNTON.

New Cavendish-street, W., August 19th, 1915.

THE STERILISATION OF ALBUMINOUS CULTURE MEDIA BY ETHER.

To the Editor of THE LANCET.

SIR,—In THE LANCET of June 12th last, under this heading, we published a short note upon a method we had employed for sterilising serum for culture purposes by means of ether. In your issue of July 31st Captain T. G. M. Hine, R.A.M.C., working as a bacteriologist at Millbank, expressed himself as "greatly disappointed and inconvenienced" as a result of "trusting to the very positive statements" in our paper.

We must confess to have read his long letter with some surprise, not only because of the severity of the criticism which he bases upon a very short experience, but also because his practical results have been so different from ours. We have now used this method for some ten months, and have prepared by it many litres of sterile serum which we have used and are using in large quantities for various culture purposes. During the past few weeks we have also made inquiries among others who have used the method, and we have been informed of one instance only in which sterility was not complete. It would appear, therefore, that Captain Hine has been unfortunate and has hastily concluded that our publication was premature or ill considered.

[1] Disorders of Digestion, p. 25.

Captain Hine says that he "scrupulously followed the method as published," but perhaps he will allow us to point out that he is in error. It definitely appears from our paper that the serum is collected freshly from the slaughtered animal, but he buys his from "a well-known firm." He will find that the bacterial contamination of (say) 6 litres of blood withdrawn from one incision is extremely small, while the contamination of commercial serum, if present at all, is necessarily great, thus at once he will arrive at a possible explanation of his failure. It is and has been quite within our knowledge that the ether method will not entirely destroy heavy inoculations of bacteria, and therefore he has demonstrated nothing new when he fails to sterilise 2 c.c. serum inoculated with "a needle charged with B. mesentericus spores."

What we claimed was that we had not failed to destroy the few bacteria present in slaughter-house serum (or ascitic fluid). We made no statement with regard to commercial serum or "hæmoglobin." We also notice that Captain Hine refers to the use of an "oven" for heating the serum. If he has been using "fairly large quantities" we hope that he followed our directions to use a water bath. However, other workers, excluding ourselves, have obtained good practical results with this process, and since no method of sterilising short of the autoclave is invariably successful, it appears to us that the record of the ether process is good and our claims justified. Perhaps if Captain Hine tries again he also will succeed.

We are, Sir, yours faithfully,

PAUL FILDES,
L. W. RAJCHMAN.

London Hospital, E., August 24th, 1915.

CONTACT INSECTICIDES.

To the Editor of THE LANCET.

SIR,—Owing to the prevalence of pediculi and other ectoparasites in the clothing of troops at the front—responsible not only for much discomfort, but for the spread of disease—some recent experiences in the investigation of practical insecticides may be of some value.

For some months I have been experimenting with various agents in order to get a good contact insecticide for killing bed-bugs in the cabins of ships. At first I followed the experiments of Saigol, Somerville, Hossack, and others, using cyllin, phenyl, benzine, and petrol. Then I tried a long series of coal-tar product mixtures, kerosene, turpentine, soap, &c. Many of these agents were useless, others were not invariably trustworthy.

I then tried "Sanitas-Sypol," a product made by the Sanitas Company and practically identical with "lysol"; and while working on this found that it made, in certain proportions, an excellent and clear solution with turpentine or with common kerosene, and that this clear mixture formed an immediate, stable, and non-inflammable emulsion on the addition of water. With a few modifications I have found such a mixture to be ideal after numerous trials. It is made up as follows:—

Stock solution.—Carbon disulphide 1, kerosene 20, mixed first by shaking; then add Sanitas-Sypol 7, and keep in a stoppered bottle.

For use.—Make a 10 per cent. solution in water, adding the water to the stock, and not the stock to the water.

This 10 per cent. solution is a milk-white emulsion. It is practically permanent when corked up, but will lose some of its insecticidal power with time, and should always be freshly prepared just before use. I have been using a "1 pint" copper pressure-sprayer made by R. Sumner and Co., Limited, of Liverpool, which gives a fine but strong spray, and is handy to carry about. Bugs appear to be killed within a second or two. Two applications proved sufficient to kill all the lice (over 2000), and their eggs, on a small pariah puppy; while the Government veterinary surgeon here, Mr. P. Scott Falshaw, reports that it is the only agent he has used which is capable of dealing instantaneously with cattle-ticks.

I am, Sir, yours faithfully,

GILBERT E. BROOKE,
July 23rd, 1915. Port Health Officer, Singapore.

THE ACCELERATED TREATMENT OF CONSUMPTION IN ITS EARLY STAGES.

To the Editor of THE LANCET.

SIR,—If it be now time, after a 30 years' trial of toxins, to attack the bacillus by drugs, as suggested by Professor Rénon's recent revival[1] of that thought and of that experimental endeavour, is it not time we remembered that Nature's pharmacopœia was intended for man rather than for his microbes, and that we have never given it its fair trial in phthisis? One great lesson at any rate we have learnt, at an appalling cost in clinical time, from Koch, "antibodies are our working remedies for antigens"; or, in plain clinical terms, the *vis veneni* can only be conquered by the *vis medicatrix seri*. That great truth cannot be appropriated to any single therapeutic avenue, howsoever seductive for the pure thought of bacteriology. As yet there is not even a postulate, only an improbable assumption, that "toxic infusion" holds a monopoly for antibody stimulation. Our facts point the other way. The milder tuberculosis of scrofula has not yet, in practice, appealed to tuberculin; Margate or tonics have been held to suffice. But as regards pulmonary tuberculosis, since we have more fully realised that the primæval remedy of "open air" is not always enough even for its mildest stage, what is our warrant for not having used the second string for our bow? It was an evil counsel of presumption that had ruled out all drugs as enemies to the cure, though they had never been tried except in the devitalised stages of phthisis; for at that time early diagnosis had not yet been dreamt of. Open air was the first to be credited with an all-conquering power; tuberculin came next; and finally open air together with tuberculin. Yet all in vain. At the present day we are still straining for a yet earlier diagnosis, but to what purpose if we treat not early? Any other "atony" we immediately brace up with our stimulants; that of incipient tuberculosis is alone denied them.

Some day the X ray may show us more than clinical eyes can see. Still, even then we shall not know which way the patient's serum may rule, for "self-cure" on the sanatorial chair? or for a steady toxic spread? All cases claim from us, for their safety, to be suspected of the worse, that they may all be treated without any delay for the utmost best—not merely by rest but *vi et armis*. Not, then, by tonics alone, but by any "third string," with a yet straighter aim. Why not, for instance (if it should be well borne), by iodide of iron, which each practitioner prescribes at once for any enlarged gland he may suspect of tuberculosis?

[1] Société de Thérapeutique, August, 1915

Some of these views might have been published 15 months ago but for the mishap that my paper got lost on its way to the press. That delay has brought me valuable experience in support of my long-standing belief that the treatment of early cases can be successfully accelerated (why not to the point of arrest?) if only begun at the start. Long before the name-day of "antibodies" I had attempted (at the wrong stage) a "metallic medication for the microbe" under the name of the "silver treatment" by intravenous injections.[2] That crude attempt was at any rate not unphysiological, although innocent of any knowledge of the "bacteriotropic" *vis seri*. Henceforth and for all, however, I have now turned, under the inspiration of Boudreau, to a "metallic medication for the man."

Meanwhile my distinguished *confrère*, Rénon, has abjured tuberculin. But is it wise at this stage to wholly ignore our solid doctrine of "sero-bacteriotropy"? It almost looks as though he were embarking upon an arduous and uncertain bactericidal journey, within sight of a land of promise which is still waiting for cultivation. The bacillus has hitherto been inaccessible to all straight thrusts. But, if correctly reported, he relies (presumably for "experimental work" only) upon a drastic side attack: that of starving the bacillus (through the dietary) of its nutritional supply of phosphorus, sulphur, and iron, and also of potassium. Would this not be like crushing "the fly on the nose" with a millstone? The minute microbe is harder to crush; but we can melt it. Its only solvent is not a starved but a fortified serum.—I am, Sir, yours faithfully,

WILLIAM EWART.

Upper Brook-street, W., August 29th, 1915.

EVOLUTIONARY ETIOLOGICAL FACTORS IN DISEASE.

To the Editor of THE LANCET.

SIR,—In reference to the letter by Dr. John Biernacki appearing in your issue of August 14th I can at once satisfy Dr. Biernacki's curiosity as to my views by stating that I *do* attack the thesis that a bacterium of pathogenic properties is of so constant and specific a character that it is not subject to the forces of evolution or retrogression. Indeed, within a comparatively short time from the human point of view, such an organism under unusual environment may become innocuous or its pathogenicity may be altered so that it becomes an essential factor in the causation of some other infective process, whether labelled or not by some other specific name of disease. It is, I submit, unthinkable that a special germ has been created for each form of infectious disease. Surely pathogenic bacteria must have evolved from saprophytes.

How far down the scale of evolution of organic life from (pristine incandescent) inorganic matter bacteria came into existence who can tell? Charlton Bastian's experiments appear to indicate that they are among primeval forms of life. In any case they are, perhaps, the most primitive forms of life known to us, and then only recognisable as "individuals" through the aid of powerful magnification.

Germ plasm and soma plasm are apparently undifferentiated in bacteria, and their vegetative multiplication is staggering in its intensity up to uncountable numbers, the multiplication of individual bacteria in favourable environment being equivalent in the course of an astronomical day of 24 hours to the multiplication of at least 50 generations of men. In other words, a day in the life history of the bacillus in favourable circumstances is as a thousand years in the history of man. On further consideration from an evolutionary point of view, it is really equivalent to a much greater epoch of time, since the germ plasm of the bacillus is fully exposed to environmental influences, and is thus, in a far greater degree than animal tissues, capable of evolving and transmitting inborn traits from acquired variations. It has been experimentally proved that the anthrax bacillus (which is as specific a bacillus as can be named) can be so altered by environment in a few days that it loses its power of spore formation, and its pathogenicity is considerably modified by simply incubating a culture of the bacillus at 42° C. Dr. Roux, director of the Pasteur Institute, reported in April, 1914, that Madame Victor Henri succeeded in his laboratory in converting anthrax bacilli into new microbes as different from normal anthrax microbes as the latter are from diphtheria bacilli, and capable of communicating a *new* disease to guinea-pigs. This change was effected by subjecting cultures of anthrax bacilli to the prolonged action of ultra-violet rays.

I wonder whether Dr. Biernacki's very extensive clinical experience has ever led him to conceive as a possibility that there may be a subtle relationship between diphtheria and scarlet fever which could be explained on the supposition that the diphtheria bacillus and the still uncertain organism, which specifists would claim as the scarlet fever germ, might be descendants from a common ancestral organism. The frequency with which so-called Hoffmann's bacillus is found in swabbings from the throats of both scarlet fever patients and of diphtheria patients is certainly suggestive from the bacteriological point of view. Outside hospital practice one meets with very puzzling forms of mild infective disease which may be looked upon as "sports," and which are probably due as much to retrogression as to true evolution in the causal germ responsible, or in the reactive phenomena of the body tissues. How is it possible to regard the numerous strains of bacillus coli, together with Gaertner's bacillus, the typhoid bacillus, the paratyphoid bacillus, *et hoc omne genus*, as separate creations. There is no difficulty in understanding them as evolved from a common ancestral organism.

Nosology is convenient, but not always strictly accurate. Disease is recognised by the reactive phenomena of the body invaded by pathogenic germs. (The symptoms may be caused by the coincident stimulation of more than one variety of germ.) Erysipelas is generally the result of body reactions against a streptococcus, which some think they can differentiate as a specific streptococcus, but even in so recent a publication as THE LANCET of August 7th (p. 269) Professor F. C. Madden, of Cairo, relates a case of spreading cellulitis where "we were hardly prepared to find that the culture [from the pus] showed an almost pure growth of staphylococcus aureus."

I have already trespassed on your space. Further reasons from a bacteriological point of view may be found, if desired, in my little book on "Evolution and Disease," which will be amplified should it reach a second edition. Suffice it to say, that in

[2] Transactions of the British Congress on Tuberculosis, 1901.

my view when once a saprophyte has evolved into a pathogenic bacterium its perpetuation as a disease-producer of constant character, such as, say, typical scarlet fever or typical diphtheria, depends chiefly on the constancy of the environmental conditions. Our knowledge even of the best-known pathogenic bacteria, such as the diphtheria bacillus with its already extensive literature, is by no means exhaustive. The key to a more comprehensive knowledge of its origin will be found in a clearer appreciation of evolutionary etiological factors in disease.—I am Sir, yours faithfully,

J. T. C. NASH,
Norwich, August 28th, 1915. County Medical Officer for Norfolk.

THE DUCK AS A PREVENTER OF MALARIA AND YELLOW FEVER.

To the Editor of THE LANCET.

SIR,—In the *American Journal of Tropical Diseases and Preventive Medicine* I find reference to an article prepared by me and published in the June number of that journal—"The Duck as a Preventive against Malaria and Yellow Fever." In the quotation from that article by me my name is given as "H. G. Dickson," Commissioner of Health of Pennsylvania, instead of "Samuel G. Dixon."

I am, Sir, yours faithfully,

SAMUEL G. DIXON,
Commissioner of Health.
Commonwealth of Pennsylvania, Department of Health, Harrisburg, August 14th, 1915.

*** The reference in THE LANCET (Nov. 7th, 1914, p. 1102) gave Dr. Samuel G. Dixon's name correctly as the author. The reprint from the *Journal of the American Medical Association* which he encloses also makes no error.—ED. L.

HEDONAL AS AN ANÆSTHETIC.

To the Editor of THE LANCET.

SIR,—My attention was attracted by an annotation in your issue of August 14th on this subject, and I thought that my experience, though limited, might be of interest. I have used hedonal anæsthesia 26 times in all; of these, 21 were for laparotomies, mostly intrapelvic, 3 for intra-oral operations, and 2 for the removal of the breast and axillary glands. The oldest patient was 65 and the youngest 11. There were no fatalities in the series, either on the table or during the patients' subsequent stay in hospital. In the way of respiratory difficulties there were two examples. The first patient of the series began to develop four hours after operation rapid and somewhat laboured breathing. This became rapidly more pronounced and cyanosis soon appeared. At six hours oxygen was administered with considerable relief, and was continued at intervals till 12 hours after operation. The respiratory embarrassment then gradually passed off, and the patient made a good recovery. This case can hardly be considered a test one, as the technique of the method had not been mastered, and the hedonal solution was made up only to half strength—0·375 per cent. in normal saline. Anæsthesia was difficult to induce, taking 25 minutes, and during 50 minutes' administration 1400 c.c. were used. The other case was that of a man aged 40 who had a gastro-enterostomy. Twelve hours after operation a slight bronchitis developed, lasted for three days, then passed off completely.

One other case is worthy of special mention. The patient, aged 29, had double salpingectomy performed. On the eighth day after operation thrombosis commenced in the cephalic vein 4 inches above the point of insertion of the cannula. It lasted for a week, extending 8 inches up the vein, then disappeared, leaving no bad effects. Of the other cases none is of special note. The anæsthesia obtained was almost invariably of a satisfactory character, the induction and recovery periods being protracted. From the patients' point of view the method is a pleasant one. Two of the patients who had previously had inhalation anæsthetics stated that they much preferred their experiences with hedonal, both as regards induction and recovery. In abdominal operations as a rule very complete muscular relaxation was obtained. In mouth cases hæmorrhage proved to be rather a troublesome factor, and the patients required careful watching afterwards. The serious objections to the method are the complicated apparatus and technique, and the risks of sepsis and thrombosis. The time taken to prepare for the administration renders it impracticable except for occasional use.

I am, Sir, yours faithfully,

Glasgow, August 21st, 1915. H. P. FAIRLIE.

ACETONE BODIES IN THE URINE.

To the Editor of THE LANCET.

SIR,—Dr. Walter G. Smith, in his letter to THE LANCET of August 21st, is of opinion that some statements in my paper, "The Signification of Acetone Bodies in the Urine," which appeared in your issue of July 31st, require correction, and fears that if they pass unchallenged they would "mislead practitioners." I could sympathise with Dr. Smith's anxieties if my doctrines were those which he has attributed to me, and particularly if there were even a remote possibility of their being attended by the disastrous consequences suggested by him. In the hope of averting those consequences I should like to assure you, Sir, that my views on the pathogeny of aceto-acetic acid in a case, say, of diabetes are not to be found in the following passage as quoted by Dr. Smith, with small, but extremely significant, alterations from my original paper:—

> A perverted metabolism has nothing to do with the production of aceto-acetic acid and its excretion in the urine, but that the seat of its manufacture is the intestinal canal, and its cause an unhealthy and irregular fermentation of the sugars and starches contained therein.

The device of wrenching a passage from its context and altering the tense of the principal verb corrupts a reasonable argument and justifiable inference into a wilful and perverse repudiation of facts of common knowledge respecting the origin of the aceto-acetic acid, which so frequently occurs in the urine of diabetic and other patients. Moreover, this misrepresentation of my opinions seems the more inexcusable in view of the fact that in the earlier part of my paper, in a brief summary of the results of modern industry and research, I made the very definite statement—

> that the alimentary sugar circulating in the blood was not the only source of these acid bodies, but that the proteid elements of the cells and tissues themselves, and probably the fats also, could, under the stress of a perverted metabolism, furnish the same morbid constituents in large quantities.

I went on, however, to point out that the detection of acetone and aceto-acetic acid, even in considerable quantities, in the urine was not always an

adequate justification of a diagnosis of acetonæmia or an acidosis, and proceeded to describe in detail two cases, typical of others, which had come under my notice. These cases presented symptoms of gastric and intestinal catarrh, feverishness, sickness, diarrhœa, and some prostration, accompanied by the presence of aceto-acetic acid in the urine. I argued that the sudden onset of the indisposition, its transitory character, the speedy disappearance of the aceto-acetic acid from the urine, and the restoration of the patient to perfect and enduring health, were not consistent with the hypothesis that grave errors of metabolism provoked the appearance of the morbid constituent in the urine, and I went on to remark—

> In these two cases my own conviction is that a perverted metabolism *had* nothing to do with the production of the aceto-acetic acid and its excretion in the urine, but that the seat of its manufacture *was* the intestinal canal, &c.

The attempt to define a limited class of cases in which the seat of origin of the aceto-acetic acid is probably the intestinal canal, has been perverted by Dr. Smith into the expression of an opinion, improperly attributed to me, that the aceto-acetic acid always originates in the intestinal canal, and never has anything to do with a perverted metabolism. Such a doctrine, of course, would be absurd, and is not to be found in my paper.

Dr. Smith was certainly in a hypercritical and captious mood when he took exception to the following passage in my paper as misleading:—

> If a sample of urine gives a reaction with nitro-prusside of sodium, acetone bodies are present.

He does not controvert the statement that acetone bodies yield a reaction with nitro-prusside of sodium, in fact he confirms it; the gist of his criticism appears to be that creatinin also reacts to the same reagent, and that therefore the value of the test as a means of recognising acetone bodies is somehow invalidated. Now, if the test be performed as I have suggested, by allowing the strong ammonia to float upon the surface of the urine, to which the reagent has been previously added, the presence of acetone bodies is indicated by a vivid crimson ring at the plane of contact of the two fluids, whereas the creatinin is denoted by a dirty reddish-yellow ring. No one with normal colour vision could possibly confound the two reactions. The discrimination between the several substances is immediate and complete. It is, moreover, quite apparent from the context of my article that by a "reaction" I do not mean any sort of reaction, but the specific and unmistakable reaction indicated by the crimson ring. With all deference, therefore, to my critic I do not think that a careful observance of my directions is likely to seriously mislead the practitioner.

The remaining, and only valid, criticism relates to a point in my article, which occupies a very insignificant place in the argument and to which only the most casual allusion is made. The omission of that allusion would not alter in the slightest degree the value of the article, whatever that may be. In the midst of a brief summary of the reasons why ferric chloride should not be solely relied upon by the busy practitioner in the routine examination of the urine for acetone bodies, I remarked that this reagent does not distinguish between acetone and aceto-acetic acid. I should have phrased the paragraph more correctly thus: That ferric chloride does not give a colour reaction with acetone, but does with aceto-acetic acid, the salicylates, aspirin, phenacetin, antipyrin, &c., produces a copious precipitate of phosphates which is very troublesome when only small quantities of aceto-acetic acid await detection; and since it does not disclose the presence of acetone, ferric chloride might prove to be a very misleading reagent in the search of acetone bodies, if it should chance that acetone alone were present in the urine.

I am, Sir, yours faithfully,

Bolton-le-Moors, August 25th, 1915. B. DERHAM.

A "NEW SIGN" IN PULMONARY DIAGNOSIS.

To the Editor of THE LANCET.

SIR,—The paper by Dr. Clive Riviere in THE LANCET of August 21st seems to call for some criticism. My present object, however, is to limit the sphere of criticism to one or two statements of fact. It may not be out of place for me to mention in the first instance that the work of Abrams on the lung reflexes was introduced to the profession in this country in a letter of mine published in THE LANCET of Oct. 17th, 1903, and this, together with the fact that I have used the methods ever since, may be some excuse for referring to Dr. Riviere's careful communication. The first thing I wish to observe is, that the area or areas of dullness depicted by Dr. Riviere correspond exactly to that depicted by Abrams. The credit of the sign (should it be really diagnostic of early or impending pulmonary tuberculosis) seems therefore to rest with Abrams. But here comes a discrepancy between the two observers. Whereas Dr. Riviere affirms that this dullness is not found in healthy subjects, unless it be produced by percussion, Abrams affirms that it may be present in *certain subjects* with normal lungs—i.e., exclusive of percussion. This applies to the dull areas both on the front and back of the chest, all of which have been described by Abrams as existing in the lungs of certain healthy persons. That these areas are increased by percussion blows was also shown by Abrams.

Lately I saw in hospital a compositor who sat all day stooping over his work, and simply crossed the street to get to his home, where he remained without taking any walking exercise. This he did day after day. The patient did not complain of his chest, but in the routine examination the dull areas were highly developed, with in places "atelectactic" crepitations. After the patient had drawn 20 or 30 very deep breaths these areas became resonant, and the crepitations disappeared. This was, perhaps, the most marked case I have observed.

Now if Abrams, who discovered the lung reflexes, asserts that these dull areas may be present in certain normal chests where pulmonary ventilation has been exceptionally deficient, this should be sufficient, quite apart from the similar observations of others, to cause grave questionings before accepting or acting on Dr. Riviere's conclusions. Pulmonary percussion of this sort is far too risky and difficult to be invoked as a reliable sign of disease, and especially of tuberculosis. A diagnosis of early pulmonary tuberculosis must surely rest on more secure foundations.

Dr. Riviere refers to "dilator nerve paths in the human vagus," as a "fact" which "has been more recently confirmed by Dixon and Brodie." This, however, is rather ancient history. The observations of Dixon and Brodie in 1903 on this point have been superseded by the investigations of Dixon and Ransom in 1912[1] in which it was shown that the vagus contains no direct dilator

[1] Journal of Physiology, 1912-13, vol. xlv., p. 413.

fibres to the bronchioles. The broncho-dilator nerves are sympathetic in origin proceeding from the first three dorsal rami, and after connexion with the stellate ganglion, proceed to the lungs with the cardiac accelerators. The vagus nerve contains only constrictor fibres.

I am, Sir, yours faithfully,

Harley-street, W., August 24th, 1915. A. G. AULD.

A CORRECTION.

To the Editor of THE LANCET.

SIR,—I shall be obliged if you will insert this correction, for the eyes of those interested in the diagnosis of phthisis, of certain unfortunate errors in the reproduction of the diagrams in my paper "A New Sign and its Value in the Diagnosis of Pulmonary Tubercle," which appeared in your issue of August 21st. Figs. 1 and 3 have been interchanged, so that it is Fig. 3 (which should be Fig. 1) that illustrates the upper and lower areas of percussion impairment about which the paper chiefly concerns itself. In addition, Fig. 4 should have contained, as well as a front view, a back view identical with that in Fig. 3.

I am, Sir, yours faithfully,

Queen Anne-street, W., August 23rd, 1915. CLIVE RIVIERE.

THE LATE DR. MARCUS J. EUSTACE.

To the Editor of THE LANCET.

SIR,—I was deeply touched to read the notice in THE LANCET of August 21st of the death of Dr. Marcus John Eustace. May I add my tribute to his memory? Though it is now some 17 years since I last saw him, he was formerly my colleague for six years in Baluchistan, and a very good friend. We worked together in the same hospital and lived together in the same bungalow. He enjoyed a wide popularity which was largely due to his genial manner and constant cheerfulness. Life was full of interest to him, for he had varied talent and was resourceful. As a surgeon he was an enterprising operator. In his leisure time I have known him as a successful fruit-grower, doing his own grafting and budding. The first telephone that I ever used was one made by him to connect our bungalow with our hospital; it was quite useful, though it consisted of absolutely nothing but a couple of empty cigar boxes and a bit of string. He was one of my lieutenants when I commanded the Baluchistan Rifle Volunteers; and as a surgeon he accompanied Sir Henry MacMahon in his mission to Seistan. As I look back to the days of twenty or five-and-twenty years ago there arises still the vision of Irish humour, overflowing geniality, and imperturbable good spirits.

I am, Sir, yours faithfully,

S. W. SUTTON, M.D. Lond.

Bishop's Caundle Rectory, Sherborne, August 23rd, 1915.

SHELL SHOCK.

To the Editor of THE LANCET.

SIR,—I notice there is a good deal of correspondence in the papers about "shell shock." Permit me to mention an incident with reference to the old belief that the wind of a round shot was often fatal to show that it was in former days compression of the air, and doubtless is so now, which kills.

In July, 1882, I was a special service officer on the staff of Admiral Sir Beauchamp Seymour on the *Invincible*, when we were attacking the Mex Forts at Alexandria, distant 1500 yards. I happened to be in the main top giving the ranges over the smoke of our guns. Several heavy round shot from the great smooth bore guns came pretty close. They did not trouble me, but one heavy projectile came so close, and with a rush like a railway-train passing me, that I staggered back. It was so close that it cut the signal haulyards, and therefore must have been within a few feet. I at once came to the conclusion that it must have been a shell from one of the two 18-ton rifled guns which I knew were in the battery, and that I did not feel the wind of it because, being a rifled projectile, it, so to say, bored its way through the air instead of compressing it as round shot were believed to do, with fatal effect to anyone close to.

I have had a good deal of experience of round shot and shell fire, which began in the Crimea and ended near Soissons. I had a special pass then to get information if possible of a nephew wounded and missing; but the only projectile in which I ever took special interest was the big shell in 1882. One of my sons is an invalid from concussion of the brain from a shell bursting just as it cleared his head; but that is another matter.

I am, Sir, yours faithfully,

ALEX. B. TULLOCH,
Major-General, retired.

Glaslyn Court, Abergavenny, August 26th, 1915.

THE NEGLECT OF VACCINATION.

To the Editor of THE LANCET.

SIR,—For some time vaccinations have been steadily decreasing in numbers, owing to the ease with which the so-called conscientious objectors evade the law. Now we public vaccinators are faced with further losses in bonuses. For four years past no Local Government Board inspection has taken place in this district, and no explanation of this neglect can be elicited.

I am, Sir, yours faithfully,

August 27th, 1915. PUBLIC VACCINATOR.

*** The Local Government Board inspections for purposes of award have been delayed on account of other pressing duties which have devolved upon the Medical Department of the Board, partly in connexion with the war. At present a number of unions are under inspection, and we believe that before long the arrears will to a large extent have been overtaken and the long delayed grants awarded to the public vaccinators whose work is of a sufficiently high class to merit them.—ED. L.

PRESENTATION TO PROFESSOR J. RUTHERFORD MORISON.—On August 18th an interesting ceremony took place in one of the operating theatres of the Royal Infirmary, Newcastle-upon-Tyne. On that occasion as many of Professor Morison's house surgeons as could be present met for the purpose of unveiling a life-size medallion in bronze which had been erected in the theatre where he worked to commemorate his retirement from the acting staff of the infirmary. The medallion bore the inscription:—

Rutherford Morison.
A tribute from his House-surgeons,
1888–1913.

In making the presentation, Mr. G. Grey Turner said that it was with the greatest pleasure that Professor Morison was asked to accept that medallion "as a token of admiration and gratitude for his invaluable teaching, esteem for his worth, and affection for those qualities which had endeared him to all." In accepting the memorial, Professor Morison said it was difficult for him to express his thanks, but he felt that if his house surgeons had learnt as many lessons from him as he had done from them, it might after all be worth while to commemorate their association. On the same occasion Dr. Alfred Parkin asked Professor Morison to accept a group photograph of his house surgeons as a personal memento of their very happy association with their teacher.

The War.

THE CASUALTY LIST.

THE following names of medical men appear among the casualties announced since our last issue:—

Killed.

Captain J. N. Armstrong, M.B., R.A.M.C., attached to the 2nd Durham Light Infantry.

Died of Wounds.

Major J. L. Duval, Canadian Army Medical Corps, 1st Field Ambulance.

Wounded.

Captain C. V. A. Baigent, Otago Infantry, who graduated in medicine at Otago University, N.Z.

Lieutenant J. D. Jones, R.A.M.C., attached to the 4th Welsh Regiment (T.F.).

Lieutenant W. Magner, M.B., R.A.M.C.

Lieutenant T. A. Peel, R.A.M.C., attached to the 5th Dorset Regiment.

Lieutenant N. Matthews, R.A.M.C., attached to the 9th West Yorkshire Regiment.

Lieutenant H. H. Elliot, M.B., R.A.M.C., attached to the 8th Welsh Regiment.

DEATHS AMONG THE SONS OF MEDICAL MEN.

The following sons of medical men are to be added to our lists of those who have fallen during the war:—

Lieutenant G. E. F. Campbell, 2/10th Gurkha Rifles, youngest and last surviving son of Colonel R. C. Campbell, C.B., C.I.E., I.M.S. (retired), Senior Medical Officer, Pavilion and York Place Indian Hospitals, Brighton.

Lieutenant H. J. Porter, 5th Manchester Regiment (T.F.), son of Dr. T. Porter, R.A.M.C., 3rd East Lancashire Regiment, of St. Anne's-on-Sea.

Lieutenant R. M. Humphreys, 7th Royal Welsh Fusiliers, eldest son of Major C. E. Humphreys, R.A.M.C., Divisional Sanitary Officer, 68th (Welsh) Division, County Medical Officer of Health for Montgomeryshire.

Lieutenant C. E. Procter, 7th Norfolk Regiment, son of the late Dr. H. C. Procter, of Southport and Ladysmith, S.A., was a student at the Middlesex Hospital at the outbreak of war, and had passed his First M.B Lond.

Captain R. P. Tobin, of the 7th Royal Dublin Fusiliers, only son of Mr. R. F. Tobin, F.R.C.S.I., of St. Stephen's Green, Dublin.

Captain G. Tomes, 53rd Sikhs, F.F., attached to the 1/5th Gurhka Rifles, F.F., youngest son of Colonel A. Tomes, late I.M.S., of Lynwood, Exmouth.

Captain E. G. Harries, 1st The Royal Welsh Fusiliers, younger son of Mr. T. D. Harries, F.R.C.S., of Aberystwith.

Second Lieutenant D. P. Key, Royal Engineers, elder son of the late Dr. James M. Key, of South Africa.

Captain A. W. Scot-Skirving, 5th Royal Irish Fusiliers, son of Dr. Robert Scot-Skirving, of Sydney, N.S.W.

Lieutenant E. H. B. Thompson, 9th Somerset Light Infantry, eldest son of Dr. E. T. Thompson, of Bath.

Lieutenant H. T. Treves, *Nelson* Battalion, Royal Naval Division, younger son of the late Mr. W. K. Treves, F.R.C.S., of Margate.

THE WAR EMERGENCY COMMITTEE: THE NEED OF MEDICAL MEN FOR THE ARMY.

The importance of making a special effort to ensure the success of a recruiting scheme for whole-time commissioned medical officers appeared from the notes of the proceedings of the meeting of the War Emergency Committee which we published last week. It must have been evident to our readers that the need for medical men under 40 years of age is very real. The figures quoted from the report of the work done by the War Emergency Committee in compiling a medical war register show that one qualified medical man in every three under the age of 40 and now at home would have to volunteer to meet the present demand.

The War Emergency Committee ask therefore that:—

1. Men who will volunteer for immediate service should send in their names forthwith to the secretaries, Dr. Alfred Cox and Mr. Bishop Harman, at the offices of the British Medical Association.

2. Men who will volunteer for some late and specified date should send in their names with this date clearly marked.

3. Men adding their names to a special list of *those willing to be called upon for service if and when there is a call for more men in special urgency*, should send in their names with this qualification noted.

The War Emergency Committee report that they are anxious that local War Emergency Committees should be set up in every area representative of the whole profession. It will be the duty of these local committees to review the work to be done in their districts and to consider the men who possibly could be spared for foreign service. Local committees only, it is felt, can safeguard the practices of those medical men who have joined the armies, while the War Office have agreed to accept the nomination of local committees for men applying for commissions. A number of leaflets are being prepared based on the experience derived from the voluminous correspondence already conducted, and the secretaries of the existing local committees can receive advance copies on application to the secretaries of the central War Emergency Committee.

EXCHANGE PRISONERS OF WAR.

On August 25th a number of British officers and soldiers who had been prisoners of war in Germany reached this country, and were taken to the 3rd London General Hospital at Wandsworth. In exchange German soldiers who had been prisoners in this country were returned to their native land. In addition to the wounded many men belonging to the Royal Army Medical Corps were also allowed to leave Germany. Those men who were wounded will probably be unable to serve again, as a large number have lost one or more limbs, or are so injured that their disability will render them unfit for further war service.

Whilst in hospital under the care of the German army surgeons there has been but little cause for complaint. Their wounds have been carefully and skilfully attended to, and the food was fairly good. It is only to be expected that exceptions would occur; for instance, one man who had been severely wounded in both thighs stated that as far as he knew he was the only Englishman amongst a number of wounded French and Algerian soldiers. All the patients were given meat and fair food, but as soon as it was realised that he was English he was deprived of such food and only given vegetable and fish soups "not fit for pigs." The greatest misery seems to have been during the early days after being wounded. Several men had lain out on the ground for days before being picked up; they were then placed in cattle trucks, those severely wounded lying down and the others standing up. In some instances they were kept in the trucks for three days without any food save a cup of coffee, even water being refused. The train often stopped at stations for an hour or two, the inhabitants taking a delight at jeering at them. On

arriving at the hospital, however, there was a change, and the surgeons and nurses showed them kindness and attention.

Many of the patients had been in Germany since the retreat from Mons; some had spent many months in the hospitals, whilst others had been transferred to the prison camps. There the condition of life had been deplorable. No solid food was given with the exception of black bread. For breakfast coffee was served, and for the other meals soup containing chestnuts or vegetables (the potatoes not having the eyes removed), or fish soup, the adjective "filthy" being generally employed to describe the diet. Fish was occasionally given, but it was generally so putrid that it could not be eaten. The lot of the men was greatly alleviated by the food sent from this country, and the men speak in terms of great gratitude of the work of charitable societies in sending out nourishing and palatable articles of diet. Indeed, the men stated that if they had not received the food from England they would have been starved. This evidence should encourage these societies to fresh efforts to obtain the necessary funds to provide all that is required to help our soldiers in the German prison camps. For slight breaches of discipline both officers and men were sent to prison, but appeal to medical officers was sometimes successful in obtaining immediate release, especially when men had been ordered to work before they were really able.

The experience of one officer had been terrible. He was wounded severely in the right shoulder, and lost consciousness; when he recovered he saw a German soldier and asked for a drink of water. In reply the German shot him through the left shoulder; ten minutes afterwards another German shot him through the neck. Some German nurses then found him and carried him back to a dressing station, and he was removed to a hospital. From that time he was treated in the same manner as the German officers, although, unfortunately, both arms had to be amputated at the shoulder-joints.

Colonel Bruce-Porter, the commanding officer of the 3rd London General Hospital, who was at the railway station when the exchanged prisoners were detrained, drew attention to the fact that although the men were in rags, some of them being without boots, all who were unable to walk had been supplied by the Germans with new crutches at Aachen, although previously they had been obliged to get about only with the help of broomsticks and similar make-shifts. The men on their arrival were in excellent spirits, as was demonstrated by their singing on the platform and on their way to the hospital.

MEDICAL STUDENTS AND COMBATANT COMMISSIONS.

Professor C. S. Sherrington, professor of physiology at Oxford, writes to the *Times* as follows with regard to Professor W. D. Halliburton's communication on this subject published in our columns on August 21st, accompanied by a letter from the War Office:—

The letter states, in reply to an inquiry by a leading teacher: "The War Office would be unwilling to suggest that junior students should be discouraged from taking combatant commissions." The letter also says: "It is advisable for students in the fourth and fifth years to continue their studies with a view to qualifying as soon as possible."

This War Office letter bears importantly upon the line of action which the Office desires to be taken by a very considerable number of young men. Some of us to whom they come had been under the impression that it was the wish of the War Office that all men students of medicine should refrain from offering for military or naval service and should continue their professional studentship uninterruptedly. The War Office is undoubtedly in a better position than we to judge of the country's requirements at the present time, and it is helpful to those of us engaged with students of the earlier portion of the curriculum to receive an authoritative lead from the War Office on a question as to which there may have existed some divergence of opinion.

Dr. R. King Brown, medical officer of health for Bermondsey and lecturer in public health, Guy's Hospital, writing to us on the same subject, makes a practical suggestion of which more might well be heard. He says:—

I have read with much interest the answer of Lord Kitchener's private secretary to Professor Halliburton's letter of August 16th, and while the wishes of the War Office contained in the reply with regard to fourth and fifth year medical students are quite unambiguous, I regret I am unable to say the same as to their statements about the position of the junior students. I know many who were most anxious at the beginning of the war to take combatant commissions, but reluctantly continued their studies at the suggestion of the War Office and the request of the authorities of the hospital to which they were attached, and now we have a statement which, if it means anything, appears to favour the view that they ought to take combatant commissions.

From conversations I have had with the students and their parents it seems to me that both would much prefer a decided expression of opinion one way or other, since medical students are not the type of young men who desire to wait until they are forced to join the army. There is another way out of the difficulty, and that would be for the War Office to form a special corps under the R.A.M.C. in which junior medical students could serve as privates and non-commissioned officers. In this way their services would not be lost to the medical profession, and they would gain an insight into the medical and administrative aspects of the army which would be most valuable to them in after life.

A further communication on the subject from Professor Halliburton is published to-day.

ITALY AT WAR: HER MORAL RISORGIMENTO.

AN Italian correspondent writes as follows:—

"'Is it Peace or War? Better War!' sang Tennyson just 60 years ago, when the Allied Powers—Great Britain, France, and Italy—were in conflict with the 'Russian Colossus' in the Crimea. And there were many in the British Motherland, as well as in her progeny oversea, who echoed the poet's words, impressed as they were with the deteriorating effects of a prolonged peace spent chiefly in money-making, till D'Israeli's mordaunt epigram had become all too palpably justified: 'John Bull mistakes comfort for civilisation.' Indeed, a moral, if not a physical, 'atheroma,' so to speak, was declaring itself in the body politic, a 'fatty degeneration,' induced by what Wordsworth, anticipating Tennyson, had called 'the weight of too much liberty,' with its 'getting and spending that lays waste our powers.' And the 'Third Italy,' in the day now passing, is responding to a similar consciousness, as by the call to arms she is feeling the bracing effect, the mental as well as physical tonic, that animates her youth and manhood in the fighting line, to the vindication of her national rights and the rounding off of her territorial unity.

"The military situation is affecting the whole of the national life, not least in the academic world, and, to descend to particulars, in that great department of it which deals with medical education. At Bologna, the 'Mother of Universities,' Dr. Augusto Murri, the Nestor of the

clinical school, has been usefully employed in relieving the aspirant to graduation of certain traditional exactions which he must feel as irksome as they are unnecessary in proceeding to the 'summi in Medicinâ honores.' The 'defending of a thesis' is one of these—an ordeal quite superfluous in the case of the student who has acquitted himself satisfactorily at the several examinations, written and oral, and who has, besides, a good record in the classroom and the hospital wards. Were the 'thesis' and its 'defence' an indispensable condition for the graduates' professional equipment, Dr. Murri would be the last to ignore it or to make it 'facoltativa' (optional), but, as in common with most of Italy's veteran teachers and examiners he has found it a 'negligible quantity' in the sum of qualification, he counsels its being dropped for at least this year or during the continuance of the war, to be resumed (if need be) in less abnormal times. Meanwhile, the process of graduation being in this way accelerated, the graduate will be all the sooner available for active duty at the front, launched on that eminently effective 'post-graduate course,' service in ambulance or hospital, in ennobling coöperation with the combatant arm whose care or cure it is his privilege to carry out.

"Another innovation, inspired by the necessities imposed during the war, has also been due to Dr. Murri's paternal solicitude for the young graduate in the fighting line. Many of these having passed creditably, often brilliantly, the written and oral examinations, and wanting only the 'defence of the thesis' to their graduation, have fallen at the front, and in 'the roll of honour' have to be put on record with a full description of their qualifications, academic and professional. To these Dr. Murri would vouchsafe the 'laurea ad honorem,' in consideration of their already attested proficiency in the examinations, and would admit them to the title of 'doctor,' just as if they had written the thesis which their country's call had prevented them from defending. Again the 'Comitato pro Laureandi' (the committee for the conferring of the doctorate) has been approached by Dr. Murri, and his memorial has been considered in the sense in which he has formulated it—to the recognition of the 'fallen' among the medical corps, of their right, *de facto* as well as *de jure*, to rank as Doctors of Medicine in the roll of honour."

VACANCIES FOR MEDICAL OFFICERS.—Two medical officers are urgently required to complete the establishment of the 2/1st Highland Mounted Brigade Field Ambulance, now sending drafts of officers and men overseas. Full particulars of pay and duties can be obtained from Captain A. Mowat, R.A.M.C., officer commanding, 2/1st H.M.B.F.A., Highland Mounted Brigade Camp, Thetford, Norfolk.

Captain C. B. Moss Blundell, R.A.M.C., commanding Sanitary Section, Hillsborough Barracks, Sheffield, is anxious to obtain recruits for this section. The duties performed on the field by men of a sanitary section are analogous to those performed by civil sanitary inspectors in time of peace, and men are therefore required of superior education and preferably those who have already had experience in sanitary work. If any men seeking war employment and likely to meet Captain Moss Blundell's requirements are known to our readers they should be recommended to write to that officer.

THE MEDICAL PLIGHT OF SERBIA.—Notwithstanding that the typhus fever epidemic has been well overcome, a serious condition still persists in Serbia, owing to the fact that the country has lost many of its medical men through the epidemic, while of the remainder the greater part are engaged on army service. For instance, Kragujevac has only one civil doctor for its 50,000 inhabitants. Aid is being given by the Wounded Allies' Relief Committee, whose hospital unit, now consisting of 600 beds, has opened a dispensary in the town. It is needless to say that contributions will be welcomed by the honorary treasurer, Mr. T. O. Roberts, London County and Westminster Bank, 217, Strand, W.C.

BRITISH AMBULANCE UNIT FOR ITALY.—This ambulance unit, consisting of 20 ambulances and five accessory cars, with a personnel of 55, nearly all volunteers, to the formation of which we referred in THE LANCET of August 21st, has now been inspected by the Italian Ambassador, the Marquis Imperiali, in the beautiful grounds of Sir George Young, Formosa, Cookham, Berkshire, when a demonstration before its departure for Italy was given of its efficiency. The commandant is Mr. G. M. Trevelyan. Among the officers additional to those before mentioned is Mr. Henry Tonks, F.R.C.S., of the Slade School of Art, who is one of the assistant surgeons; Professor A. C. Pigou, professor of political economy at Cambridge; Mr. Edward Garnett, son of the late Dr. Richard Garnett, of the British Museum; and Dr. Thomas Ashby, D.Litt., F.S.A., director of the British School at Rome since 1906, who will act as one of the interpreters. The unit goes out under the British Red Cross Society, but is also supported by the British Committee in Aid of the Italian Wounded, of which the British Ambassador in Rome, Sir James Rennell Rodd, G.C.V.O., K.C.M.G., His Majesty's Ambassador to Italy in Rome, is president. The Italian Government has also agreed to furnish certain supplies. The treasurer is Sir Laurence Gomme, F.S.A., whose office is at 38, Conduit-street, London, W.

ACCOMMODATION FOR BLINDED OFFICERS.—Thanks are due to Sir John and Lady Stirling-Maxwell for placing their London house, 21, Portland-place, at the disposal of officers blinded in the war. Up to the present accommodation has been provided at St. Dunstan's, Regent's Park, but the great increase in the number of cases of blindness from the front has rendered necessary the provision of other accommodation. Lessons in Braille, typewriting, and other subjects will still be given at St. Dunstan's or the National Institute for the Blind, Great Portland-street, but the officers will sleep and have their meals at the new quarters.

THE ONTARIO GOVERNMENT MILITARY HOSPITAL.—The hospital to contain 1040 beds for the sick and wounded of the Canadian contingent is to be situated at Orpington, Kent. The prime cost of construction and equipment will be undertaken by the Ontario Government, but on completion the customary War Office grant to recognised voluntary hospitals will be forthcoming.

BATH MILITARY HOSPITAL.—A representative of the War Office has taken formal possession, on behalf of the military authorities, of the site of Combe Park, Weston, which is to be utilised for the erection of a hospital for wounded soldiers. The total area of the ground is about 26 acres.

KING'S COLLEGE, LONDON: ROLL OF HONOUR.—King's College, London, is revising for publication its list of past and present students on active service. The secretary would be glad to receive, either from the men themselves or from their friends, the latest details of rank and regiment of all former students on service, in order that the roll of honour may be rendered complete to date.

Mr. A. Fullerton, F.R.C.S. Irel., assistant surgeon to the Royal Victoria Hospital, Belfast, has been offered by the War Office, and has accepted, the post of consulting surgeon to the British army in France, with the rank of colonel in the Army Medical Department.

AMONG recent appointments to commissions as Lieutenants in the R.A.M.C. appears the name of the Rev. Kirkland Whittaker, Chaplain of Banstead Asylum, Surrey, who is also an M.D. Edin. The approval of the Bishop of Winchester has been given to the appointment.

Professor H. Alexis Thomson, professor of surgery of Edinburgh University, has been appointed consultant surgeon to the Expeditionary Force.

Obituary.

DAVID BRIDGE LEES, M.D. CANTAB., M.D. DURH., F.R.C.P. LOND.

CONSULTING PHYSICIAN TO ST. MARY'S HOSPITAL AND TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND STREET.

WE announced last week the death of Dr. David Bridge Lees, which occurred on August 16th with startling suddenness, for the distinguished physician was engaged in his consulting-room with a patient when the fatal seizure occurred.

David Bridge Lees was born in Manchester in 1846 and was educated at the Owens College, Manchester, Trinity College, Cambridge, Guy's Hospital, and Vienna. He had a distinguished scholastic career at Cambridge. A classical scholar at Trinity, he graduated in mathematics as twenty-second Wrangler, and in 1869 was fifth in the Natural Science Tripos and Carus Prizeman, which denotes distinction in Greek and divinity. From Cambridge he proceeded to Guy's Hospital, where he held the usual appointments, qualified as M.R.C.S. Eng., and took his medical degree at Cambridge in 1874. He returned to Owens College, Manchester, and was for a time engaged in educational work, but in 1875 he took the M.R.C.P., in 1876 the M.D. Cantab., and in 1879 was elected assistant physician to Great Ormond-street Children's Hospital. In 1880 he was appointed assistant physician to St. Mary's Hospital in place of Dr. Robert Farquharson.

At St. Mary's Hospital Lees made an early mark as a learned physician and sound observer whose range of clinical work was a large one. Although he became best known, perhaps, for his work in connexion with tuberculosis and rheumatism and its connexion with heart disease, he was in no sense a specialist. Papers in THE LANCET and the *British Medical Journal* on the Dextrocardiac Respiratory Reflex and on the Effective Treatment of Acute and Subacute Rheumatism show the careful method in which he approached different clinical subjects. Several essays displaying the same qualities will be found in his book, "The Treatment of Some Acute Visceral Inflammations and Other Papers," which was published about 12 years ago. This book contains three lectures delivered before the Harveian Society of London, of which society he was President, and various communications in which are discussed many clinical details in connexion with cardiac disease, pneumonia, empyema, pleurisy, appendicitis, and nephritis. In all these essays he laid stress on certain points which he considered from practical experience had not received sufficient attention from practitioners, while he invariably dwelt on the various therapeutical measures which he believed to be of especial importance. He attached, for example, great significance to ascertaining by light percussion the size of the left ventricle and of the right auricle, and gave directions in one paper as to the manner in which the percussion should be carried out. He had, again, very definite views on the administration of sodium salicylate in acute rheumatism and chorea, maintaining that children require proportionately larger doses than adults, for in them the rheumatic infection is much more intense, and drawing in support of his opinions on the experience derived from his long connexion with the Great Ormond-street Hospital. To the "System of Medicine," edited by Sir Clifford Allbutt and Dr. Rolleston, he contributed, with Sir Thomas Barlow, the article on Simple Meningitis in Children, and to Allchin's "Manual of Medicine" the articles on Acute and Subacute Rheumatism.

Recently Dr. Lees's interest had been directed towards the signs, symptoms, and treatment of incipient pulmonary phthisis, and this subject he chose for the Bradshaw lecture of the Royal College of Physicians of London, which he delivered in 1912. The subject was appositely chosen, as the lecture was delivered just as the sanatorium benefit of the National Insurance Act was beginning to take effect, and it was obvious that it was of the highest importance that the general practitioner should have a good knowledge of the diagnosis and treatment of the disease in its early stage. Dr. Lees stated clearly in his lecture that the diagnosis of pulmonary tuberculosis meant the detection of the disease at its first appearance, but he took the subject into the realms of controversy by adding that every practitioner should learn how to detect the disease "long before any bacteriological evidence is available." He thought it possible that a method of treatment in such circumstances which would be inexpensive and effective could be employed in the patient's own home. It was felt that the majority of general practitioners, and many consultants and specialists also, would hesitate in giving a definite diagnosis of pulmonary tuberculosis until the pathogenic bacillus had been found in the patient's sputum. The impression created by the lecture was that while Dr. Lees had cultivated a remarkable skill in diagnosing these cases by percussion, not many practitioners would be able to reach such a stage of technical precision. Just as the examination of patients with a view to diagnosis was largely confined to the method of percussion, so the treatment recommended was mainly that of continuous inhalation of certain volatile drugs possessing antiseptic properties. Dr. Lees brought forward many facts and quoted many results demonstrating the value of continuous inhalation, and the general feeling of those who heard his lecture or read it later in our columns[1] was that if the methods could not accurately be achieved by others, nevertheless their recommendation would tend to draw attention to a useful course of treatment.

As was natural for a man who was alike a scholar and a clinician, Dr. Lees's services were often in request as an examiner. He examined in medicine in the Victoria University of Manchester, the University of Durham, the University of Cambridge, and the Conjoint Board of the English Colleges. At the Royal College of Physicians of London he was elected Senior Censor this last July.

The following note from one of Dr. Lees's colleagues and friends at St. Mary's Hospital shows the high esteem in which he was held at this institution, where he did so much good work. He writes:—"It was with the deepest regret that the news of the sudden death of Dr. Lees came to his former colleagues at St. Mary's Hospital. Though he was educated elsewhere, his professional career was bound up with St. Mary's Hospital and School. For years he worked hard and conscientiously, as he always did work, in the crowded out-patient rooms as assistant physician, and no time was ever grudged by him in minute investigation of his patients. During most of this time he delivered the summer course of lectures

[1] THE LANCET, Nov. 9th, 1912, p. 1278.

on materia medica and therapeutics, and was engaged as well as assistant physician at the Children's Hospital, Great Ormond-street, where he built up his reputation as an original investigator of children's diseases. With the retirement of Dr. Handfield-Jones, Dr. Lees became full physician to the hospital, and devoted himself to the work with the greatest zeal and energy. He spent at the hospital almost as much time every day as on his regular visiting days, and there was never a point in the history or course of his cases that was overlooked or unrecorded. He was especially interested in cardiac cases, and his numerous valuable contributions to medical literature on heart affections in rheumatism and in other diseases, were the outcome of his thought and attention to matters of treatment. Even after he had ceased to be a member of the active staff, Dr. Lees came to the hospital for further study and for opportunities of acquiring a knowledge of recent methods of investigation and treatment of heart conditions. Dr. Lees was a great advocate of treatment by the ice-bag in pneumonia, in pericarditis, and in other acute diseases, and embodied his experiences in his work on the treatment of visceral diseases. He gave the same care and labour to the preparation of his lectures and demonstrations as he did to his work in the wards, and his systematic lectures were models of lucid exposition. He was an enthusiast in anything he took up, and lost no opportunities of putting his ideas to the test and in recording his results. By his colleagues he was admired and respected for his high sense of duty, for his undeviating loyalty, and for his outstanding honesty of purpose and of practice. His character and his high standard of honour and of right-doing were of the greatest value in a medical school; it may be safely said of him that he never made or deserved an enemy, and his friends and admirers comprised all who knew him.

FREDERICK VICTOR DICKINS, C.B., M.B. LOND., B.SC., M.R.C.S., L.S.A.

ON August 16th, at Seend, Wiltshire, aged 77 years, a man of very versatile talents and varied career passed away in the person of Dr. Frederick Victor Dickins, C.B. He was the son of Mr. Thomas Dickins, J.P., of Edgemoor House, Broughton, Manchester, and was born on May 24th, 1838. He was educated at Rossall School and at Paris. In 1855 he became an apprentice at the Manchester Royal Infirmary. He qualified as M.R.C.S. in 1859 and joined the Naval Medical Service. He had already, before qualification, served as medical officer on a steamer to Australia, and the voyage so imbued him with a love of the sea that it determined his original choice of career. In the navy, on his first voyage as assistant surgeon, he visited Japan, and was so charmed with the country and its people that he determined one day to settle there. He served as medical officer in the navy in China and Japan from 1861 to 1866, and then decided to enter a warehouse in Manchester to learn business, but had only been there a short while when he was informed that there would be openings in Japan for English barristers. He studied law and was called to the Bar in 1870, and went to reside in Japan, and for many years pleaded in the Japanese law courts in several languages. He also started a newspaper there, which he himself edited. This venture proved successful and he made a small fortune, but his health failing he returned to England. The change, however, soon restored his health, and he sought other congenial occupation. He went to Egypt and started to practise at the Bar there, but Arabi Pasha's rebellion breaking out in 1882 decided his return to England—this time for good, for he was appointed to the assistant registrarship of the University of London under Mr. A. Milman, the Registrar. In 1896 he succeeded to the registrarship, and on his retirement in 1901, when the honour of C.B. was bestowed upon him, he went to spend the remainder of his days in Wiltshire.

He was not, however, lost to the London world, for he retained his membership of the Athenæum Club and of some Japanese societies in London, at whose meetings he often read papers and took part in discussions. He was a great linguist, being really familiar with many European languages. Japanese, however, was the language in which he took the greatest interest. He was also interested in Oriental archæology, and his translations of, and commentaries upon, various Far Eastern classics are well known. He leaves a widow, two sons (one of whom is in the Royal Artillery), and two daughters to mourn their loss.

ARCHIBALD ROBERTSON DOUGLAS, L.R.C.P., L.R.C.S. EDIN., L.F.P.S. GLASG.,

MEDICAL SUPERINTENDENT, THE ROYAL ALBERT INSTITUTION FOR THE FEEBLE-MINDED, LANCASTER.

WE regret to announce the death, after a brief illness, at the early age of 47, of Mr. A. R. Douglas, medical superintendent of the Royal Albert Institution, Lancaster.

Mr. Douglas was educated at the Newcastle-upon-Tyne School of Medicine and at Edinburgh, where he obtained a certificate of honour in physiology in 1885 and qualified in 1889. After acting as resident surgical assistant at the Royal Infirmary, Newcastle-upon-Tyne, and registrar of the Throat and Ear Hospital there, he turned to lunacy work, and after serving as assistant medical officer at the Dunston Lodge and East Riding Asylums, he was appointed, in 1893, assistant medical officer at the Royal Albert Asylum, becoming superintendent 12 years later. During his tenure of office many important developments took place at the institution, the chief being the erection of the Ashton Wing for the accommodation of epileptic and feeble patients; the provision of the James Diggens Memorial Reception House, which enabled the classification of the patients to be carried out with efficiency; and the development of the farm-colony system, under which provision is made for 40 patients. With an extensive practical experience of the treatment of all kinds of mental diseases, Mr. Douglas combined a marked ability in organisation and administration, and it is a tribute to his skilful management that the weekly cost of maintenance was greatly reduced, whilst at the same time the reports of the Lunacy Commissioners were highly favourable. His attitude was that the institution was for the training of the feeble-minded, and the development of the educational work had his constant encouragement. These views he expressed before Royal Commissions and in papers contributed to scientific congresses and the scientific press.

A capable physician and organiser, an accomplished writer, a good musician and amateur actor, the death of Archibald Robertson Douglas in the prime of life is a grave loss to the community in which he worked, as well as to a large circle of private friends. He leaves a widow and two sons.

EDWARD LAWRIE, M.B. EDIN., M.R.C.S. ENG.,

LIEUTENANT-COLONEL, INDIAN MEDICAL SERVICE (RETIRED).

Edward Lawrie, who died at Hove on August 22nd, spent 30 years of his life in India in the Indian Medical Service. Born on May 17th, 1846, he studied at Edinburgh and Paris, and became M.B. of Edinburgh in 1867 and a Member of the Royal College of Surgeons of England in the same year. At Edinburgh he was house surgeon at the Royal Infirmary under Professor Syme. In 1872 he entered the Indian Medical Service and was appointed resident surgeon at the Medical College, Calcutta. In 1879 he was appointed civil surgeon of Monghyr, Bengal, and eight months later he became professor of surgery and physiology at the Lahore Medical College. Six years later he was appointed residency surgeon at Hyderabad, Deccan, and in this capacity he was able to enlist the sympathies of the Nizam in the very interesting medical and physiological problems involved in the administration of chloroform. He succeeded in securing the appointment of the Hyderabad Chloroform Commission of 1889–90 under H.H. the Nizam's Government. Retiring from India in 1901, he practised for a few years as a consulting physician in London, and, retiring, went to Hove. At the outbreak of the present war he was appointed for general duties to the staff of the Indian Hospital at Brighton, where his intimate knowledge of the natives of India and his skill as an anæsthetist were valuable. In 1879 he married Laura Frances, youngest daughter of the late Major-General H. K. Burne, C.B., Military Secretary to the Government of India, who survives him. The funeral took place with military honours at Hove Cemetery on August 26th, following a service at St. Thomas's Church.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates were successful in the subjects indicated :—

Surgery.—J. L. Hamilton (Sections I. and II.), London Hospital; G. W. Hassall (Sections I. and II.), Birmingham; E. L. Ivens (Sections I. and II.), London Hospital; W. F. Matthews (Sections I. and II.), King's College Hospital; A. L. Robinson (Sections I. and II.), St. Mary's Hospital; C. P. C. Sargent (Section I.), St. Bartholomew's Hospital; F. Simpson (Sections I. and II.), Charing Cross Hospital; R. R. H. O. Tha (Sections I. and II.), Cambridge and University College Hospital; and A. Traill (Sections I. and II.), Oxford and Guy's Hospital.

Medicine.—L. M. Arnold (Sections I. and II.), Cambridge and St. Mary's Hospital; G. T. Baker (Section I.), Middlesex Hospital; R. N. Craig (Section I.), Guy's Hospital; L. S. Goss (Sections I. and II.), Middlesex Hospital; H. L. Hughes (Sections I. and II.), St. George's Hospital; H. S. Jeffries (Sections I. and II.), Oxford and London Hospital; F. Simpson (Section II.), Charing Cross Hospital; R. R. H. O. Tha (Sections I. and II.), Cambridge and University College Hospital; A. Traill (Sections I. and II.), Oxford and Guy's Hospital.

Forensic Medicine.—H. L. Hughes, St. George's Hospital; F. Simpson, Charing Cross Hospital; R. R. H. O. Tha, Cambridge and University College Hospital; and A. Traill, Oxford and Guy's Hospital.

Midwifery.—H. M. Gray, Guy's Hospital; E. L. Ivens, London Hospital; S. G. K. Kastellanski, Freiburg; A. L. Robinson, University College Hospital; R. R. H. O. Tha, Cambridge and University College Hospital; and R. H. Yolland, Cambridge and King's College Hospital.

The Diploma of the Society was granted to the following candidates entitling them to practise medicine, surgery, and midwifery:—G. W. Hassall, H. L. Hughes, H. S. Jeffries, W. F. Matthews, A. L. Robinson, F. Simpson, R. R. H. O. Tha, and A. Traill.

QUEEN'S UNIVERSITY OF BELFAST.—The following degrees have recently been conferred :—

M.D. Degree (by Thesis).—Charles Alexander, Harold Black (with Commendation), John M'I. Gibson (Gold Medal), W. S. Haydock, and Espine Ward.

M.D. Degree (by Examination).—Samuel J. Turkington.

At examinations held recently the following candidates were successful :—

M.B., B.Ch., B.A.O. Examination.—John B. Alexander, Ribton G. Blair, Edwin G. B. Calvert (first-class honours and scholarships of £30 and £20), Albert E. M. Carleton, Thomas W. E. Elliot, Mary A. Gallagher, James J. Hanratty, Patrick Kane, Thomas M'Clurkin, Arthur L. M'Creery, Robert G. M'Elney, James M'Kay, Sylvia Marsh, Thomas Milling, Frank P. Montgomery, Abraham Porter, Robert L. Rea (second-class honours and scholarship of £30), Frederick A. E. Silcock, James J. Thompson, William A. Thompson, Elizabeth S. Walker (second-class honours and scholarship of £30), Robert F. Walker, Denis K. Watterson, and Robert H. Wilson.

Diploma in Public Health.—William S. Boyd, Georgina R. Darling, John M'I. Gibson, Richard M'Culloch, and George R. B. Purce.

Third Medical Examination.—Hugh E. Magee (scholarship of £40), James Boyd and Cecil J. A. Woodside (divide scholarships of £30 and £20 equally), and John Lascelles (scholarship of £15).

Second Medical Examination.—William J. Lyttle (scholarship of £40), George D. F. M'Fadden (scholarship of £30), Henry Macauley (scholarship of £20), and Frederick Campbell (scholarship of £15).

First Medical Examination.—Gordon D. L. Smith (scholarship of £40), George A. Metcalf (scholarship of £30), and Eric A. Davison and Samuel Simms (divide scholarships of £20 and £15 equally).

ST. THOMAS'S HOSPITAL MEDICAL AND SURGICAL COLLEGE.—The results of the Entrance Science Scholarships, 1915–16, are announced by the Dean as follows: First, A. S. J. M. Huggett, £150; second, H. S. Le Marquand, £60.

ROYAL MEDICAL BENEVOLENT FUND.—At the last meeting of the committee 19 cases were considered and £137 were granted to 17 of the applicants. The following is a summary of the cases relieved :—

Daughter, aged 56, of M.R.C.S. Eng. who practised in London, Halifax, and Manchester. Has earned a living as housekeeper until recently. Health broken down, so requires a rest. Voted £5 and referred to the Guild.—Widow, aged 61, of M.R.C.S. Eng. who died in 1887 and had practised at Ambleside. Until the war commenced had just managed to earn a living by teaching and taking in boarders, mainly from France, who came to learn English. Since the war has scarcely earned anything and is in great difficulties. Voted £10.—L.R.C.P. & S. Edin., aged 64, who practised in the Midlands. Is suffering from phthisis and scarcely able to practise. Two sons who assisted in the upkeep of the house joined the army, and one has been killed and the other dangerously wounded. The applicant badly wants a short holiday. Voted £5.—Widow, aged 57, of L.R.C.P. & S. Edin. who practised at Walsall. Husband, who died in 1902, left no provision for his widow and two daughters, both of whom are training for the teaching profession. Applicant's only income is about £20 from literary work and £20 from a relative. Relieved nine times, £94. Voted £12 in 12 instalments.—Daughter, aged 65, of M.R.C.S. Eng. who practised at Liverpool. Lost all her income in consequence of an Australian Bank failure. Is a confirmed invalid and practically bedridden. With the help given by the Fund and several friends applicant just manages. Relieved twice, £24. Voted £12 in 12 instalments.—Widow, aged 70, of M.R.C.S. Eng. who practised in East London. Left totally unprovided for at husband's death in 1913. Has five children, three of whom are married, and with the other two unable to help. Has a small pension from another society and relatives help a little. Relieved twice, £24. Voted £12 in 12 instalments.—Widow, aged 56, of L.R.F.P. & S. Glasg. who practised at Heaton and died in 1899. Was left totally unprovided for at husband's death with six children. The two eldest now married and unable to assist. One son and one daughter working, and earn 20*s.* per week between them. Applicant endeavours to increase her income by taking lodgers, but this is very precarious. Relieved 13 times, £154. Voted £12 in 12 instalments.—Widow, aged 43, of L.R.F.P. & S. Glasg. who practised at Ellesmere Port and died in 1910. Applicant was left practically unprovided for with seven children aged 5 to 19. Only certain income £45 per year, and sister helps to pay the rent. The eldest daughter hopes to obtain work soon as a teacher. Relieved three times, £36. Voted £12 in 12 instalments.—Daughter, aged 58, of M.D., M.R.C.S. Eng. who practised at Wymondham. Income was invested by a guardian who appropriated all the capital and left the applicant destitute. Only income £13 a year from a relative. Not strong enough to work. Relieved seven times, £35. Voted £5.—Daughter, aged 77, of M.R.C.S. Eng. who practised at Bungay. Only income a small annuity purchased by friend, and owing to increased cost of food and having recently to remove to another lodging requires a little help. Relieved some years ago, twice, £23. Voted £5.—Widow, aged 78, of L.R.F.P. & S. Glasg. who practised at Leiston. Has five children, none at present able to help. Has a pension from another charity. Relieved three times, £18. Voted £3.—Widow, aged 60, of L.S.A. Lond. who practised at Rotherhithe and died in 1897, leaving the applicant with eight children, seven of whom are now married and unable to assist. One son at home does all he can, but it is not sufficient to keep both his mother and himself. Applicant just recovering from a severe illness. Relieved eight times, £120, the last several years ago. Voted £5.—Daughter, aged 65, of M.R.C.S. Eng. who practised at Ford and died in 1901. Applicant left unprovided for, and owing to ill-health and age unable to work. Only income the amount received from the Fund and the Guild. Relieved eight times, £99. Voted £12 in 12 instalments.—Widow, aged 56, of L.R.F.P. & S. Glasg. who practised at Bilboa and Winchcombe, and who died in 1898. Was left with two young boys, since dead, quite unprovided for. Has derived her income from taking in boarders, but owing to the district in which she had established herself having deteriorated, and the war, was unable to make the place pay. Had received the chance of a good house in the country, and wanted help for removal expenses. Granted by the Fund £10, the Guild £15, and two other societies assisted to enable the applicant to remove.—Daughter, aged 47, of M.D. St. Andrews. Has recently undergone an operation and not yet strong enough to work. Earned a living as a school

teacher but all her savings gone in consequence of ill-health during the last two years. Father unable to help as he can scarcely keep himself owing to old age and ill-health. Relieved once, £5 Voted £3, with leave to apply later in the year.—Daughter, aged 59, of M.R.C.S. Eng. who practised in Suffolk. Applicant has continual ill-health, and only income derived from letting her furnished cottage and amount given by the Fund. Relieved ten times, £106. Voted £12 in 12 instalments.

Subscriptions may be sent to the honorary treasurer, Dr. Samuel West 11, Chandos-street, Cavendish-square, London, W.

A MIDWIVES BILL FOR SCOTLAND.—A Memorial has been presented to the Secretary for Scotland and to the Privy Council urging the importance of the passing without delay of a Midwives Bill for Scotland. The need for such a measure was unanimously expressed by the medical and nursing professions in Scotland last year, but the Private Members' Bill on the subject, which passed through the House of Lords, was dropped in the House of Commons. "Since then," says the Memorial, "a situation of very grave urgency has arisen out of the war. A large number of medical practitioners throughout Scotland have been called away for war service. The result of this is that it will be impossible for those practitioners who still remain to overtake all the attendance on midwifery cases that is necessary. A large amount of midwifery practice will therefore of necessity fall into the hands of midwives and unqualified women. These persons, many of them absolutely untrained, are *under no such official or medical supervision* as is provided in England." The Memorial calls for the enactment of a Midwives Bill for Scotland as an immediate remedy, and instances as a precedent the Notification of Births Act, which was by special legislation made applicable to the whole country, in order to meet a national emergency.

The memorial is signed by the Presidents of the Royal Corporations, Dr. Freeland Barbour, Dr. James Hodsdon, and Dr. John Barlow; by the following professors, deans of faculty, and examiners in midwifery: John A. Kynoch, Thomas H. Bryce, Murdoch Cameron, John M. Munro Kerr, Theodore Shennan, William Stephenson, R. G. M'Kerron, Harvey Littlejohn, A. R. Simpson, J. Halliday Croom, Robert Jardine, D. G. Marshall, R. W. Johnstone, James Ritchie, and D. Berry Hart; by the following medical officers of the maternity hospitals in Scotland: J. W. Ballantyne, R. C. Buist, James Haig Ferguson, William Fordyce, F. W. N. Haultain, J. Lamond Lackie, H. Oliphant Nicholson, Willian L. Reid, A. W. Russell, G. F. Barbour Simpson; and by the medical officer of health of Edinburgh, A. Maxwell Williamson, and of Glasgow, A. K. Chalmers.

BELFAST DISTRICT LUNATIC ASYLUM. — The report of the medical superintendent, Dr. W. Graham, for 1914, just issued, states that there was a decrease of 56 in the number of admissions (220 instead of 276 in 1913), while altogether 1259 patients were under treatment. The expenditure for the financial year was £30 752 5*s.* 10*d.* In explanation of the fall in the number of admissions, which covers a period contemporaneous with the war, Dr. Graham says it is based on what he terms "a profound psychological law," and he further explains that it is not the great tragedies of life which destroy the reason, but the continual, small, wearing worries of life; and so he believes that the war, by its sobering and purifying effect upon the life of the people, will cause an improvement in the mental health.

CORNWALL INSURANCE COMMITTEE AND EXCESSIVE PRESCRIBING.—At the last meeting of the Cornwall Insurance Committee it was decided to surcharge several medical men in amounts varying from £40 to a few shillings for excessive prescribing. It was said that the drugs surcharged for were practically not official, but mostly German and American, and if a medical man prescribed them he did it at his own risk. At present almost any drug in the British Pharmacopœia can be prescribed by the panel doctor.

THE War Office announces that nurses seeking appointments in military hospitals should apply in writing to the Matron-in-Chief at the War Office. When a personal interview is necessary, the candidate will be notified. An interview cannot be granted unless an appointment has been made beforehand.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ANWYL-DAVIES, T., M.R.C.S., L.R.C.P., has been appointed Resident House Surgeon at St. Thomas's Hospital.

BALLANTYNE, A. J., M.D., has been appointed Lecturer on Ophthalmic Medicine and Surgery to Anderson College of Medicine, Glasgow.

BOWEN, D. R., L.R.C.P. & S. Edin., has been appointed Civilian Medical Officer to the 16th, 17th, 18th, and 19th Battalions, Northumberland Fusiliers, stationed at Cramlington, Northumberland.

CAVENAGH, J. B., M.B., B.Ch. Oxon., M.R.C.S., L.R.C.P., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

CRANSTOUN, G., M.R.C.S., L.R.C.P., has been appointed Resident House Surgeon at St. Thomas's Hospital.

GARDINER-HILL, H., M.R.C.S., L.R.C.P., has been appointed Resident House Surgeon at St. Thomas's Hospital.

GARDNER, A., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Dronfield District of the county of Derby.

GIMBLETT, C. L., M.B., B.C. Cantab., M.R.C.S., L.R.C.P., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

GOTCH, O. H., M.B., B.Ch. Oxon., has been appointed Resident House Physician at St. Thomas's Hospital.

HEWITT, R. C., M.R.C.S., L.R.C.P., has been appointed Senior Obstetric House Physician to St. Thomas's Hospital.

JENNINGS, H. C., M.R.C.S., L.R.C.P., has been appointed Resident House Physician at St. Thomas's Hospital.

MCMILLAN, K. H., M.R.C.S., L.R.C.P., has been appointed House Surgeon to St. Thomas's Hospital.

MARSHALL, W. H., M.R.C.S., L.R.C.P., has been appointed Junior Obstetric House Physician to St. Thomas's Hospital.

MILES, S. H., M.R.C.S., L.R.C.P., has been appointed Senior Ophthalmic House Surgeon to St. Thomas's Hospital.

MOLINA, F., M.R.C.S., L.R.C.P., has been appointed Resident House Surgeon at St. Thomas's Hospital.

ROMANIS, W. H. C., M.R.C.S., L.R.C.P., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

SALOMON, H., M.D., L.R.C.P. & S. Edin., has been appointed Medical Officer and Public Vaccinator to No. 5 District, Leicester Union.

VARMA, B. P., M.B., Ch.B. Edin., has been appointed Assistant House Surgeon to the Royal Albert Hospital, Devonport.

WARDE, A. H., M.R.C.S., L.R.C.P., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).
When the application of a Belgian medical man would be considered the advertisers are requested to communicate with the Editor.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer, unmarried. Salary £250 per annum, with apartments, fire, light, and attendance.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Junior House Surgeon. Salary £100 per annum, with residence, board, &c.

BRISTOL GENERAL HOSPITAL.—House Physician and Casualty House Surgeon for six months. Salary at rate of £150 per annum, with board, residence, &c.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Female Junior Resident Officer. Salary £100 per annum, with board, rooms, attendance, and laundry.

BRISTOL ROYAL INFIRMARY.—Resident Obstetric and Ophthalmic House Surgeon for six months. Salary at rate of £120 per annum, with board, apartments, and laundry. Also Dental House Surgeon for six months. Salary at rate of £120 per annum, with apartments, board, and laundry.

BUXTON, DEVONSHIRE HOSPITAL, Derbyshire.—Assistant House Physician for six months. Salary at rate of £100 per annum, with apartments, board and laundry.

CARDIFF, KING EDWARD VII.'s HOSPITAL.—House Surgeon for six months. Salary at rate of £140 per annum, with board, residence, and laundry.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—House Physician for six months and House Surgeon for four months. Salary at rate of £75 per annum each, with board, residence, and washing.

GLOUCESTERSHIRE JOINT COMMITTEE FOR TUBERCULOSIS.—Assistant Tuberculosis Medical Officer. Salary £350 per annum.

GRIMSBY AND DISTRICT HOSPITAL.—House Surgeon. Salary £5 5*s.* per week, with board, lodging attendance, and washing.

HASTINGS, EAST SUSSEX HOSPITAL.—House Surgeon. Salary £100 per annum, with board residence, and laundry.

HELLINGLY, EAST SUSSEX COUNTY ASYLUM.—Temporary Assistant Medical Officer. Salary 6 guineas a week, with board, lodging, and washing.

LABORATORIES OF PATHOLOGY AND PUBLIC HEALTH, 38, New Cavendish-street, W.—Bacteriologist.

LEEDS PUBLIC DISPENSARY.—Female Resident Medical Officer. Salary £130 per annum, with board, residence, and laundry.

LIVERPOOL, COUNTY ASYLUM, Rainhill.—Temporary Assistant Medical Officer. Salary £8 6*s.* per week, with board, apartments, attendance, and washing.

LIVERPOOL INFIRMARY FOR CHILDREN, Myrtle-street.—Two Resident House Physicians and Resident House Surgeon for six months. Salary £30 in each case, with board and lodging.

MANCHESTER, COUNTY ASYLUM, Prestwich.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST, Bowdon, Cheshire.—Resident Medical Officer for In-patient Department. Salary £250 per annum, with board, apartments, washing, &c.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Parkplace, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

MANCHESTER ROYAL INFIRMARY.—General Superintendent and Secretary. Salary £700 per annum, unfurnished flat, washing, fuel, and light.

MIDDLESBROUGH, NORTH ORMESBY HOSPITAL.—House Surgeon. Salary £150 per annum, with board, residence, and washing.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, W.C.—Resident Medical Officer. Salary £100 per annum, with board and residence.

NORWICH, NORFOLK WAR HOSPITAL, Thorpe.—Vacancies on Resident Medical Staff. Pay £1 per diem, and all found.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—District Resident Medical Officer for four months. Salary at rate of £60 per annum, with board, residence, and washing.

READING, ROYAL BERKSHIRE HOSPITAL.—Resident Clinical Assistant for six months. Salary £150 per annum, with apartments, board, and washing, if qualified; if unqualified, £75 per annum.

SALISBURY GENERAL INFIRMARY.—Assistant House Surgeon, unmarried. Salary £100 per annum, with apartments, board, lodging, and washing.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Surgeon. Also House Physician. Salary £200 and £150 per annum respectively, with rooms, board, and washing.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—House Surgeon. Salary £150 per annum, with residence, board, and washing.

TINGWALL, WHITKNESS, AND WEISDALE, PARISH OF.—Medical Officer and Public Vaccinator. Salary £45 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Surgeon. Salary £200 per annum, with board and lodging. Also Senior Resident Medical Officer. Salary £200 per annum, with board, lodging, and washing.

WEST BROMWICH AND DISTRICT HOSPITAL.—Assistant House Surgeon, unmarried. Salary £120 per annum, with residence, board, and laundry.

WEST HAM AND EASTERN GENERAL HOSPITAL.—Resident Medical Officer. Salary £160 per annum. Also House Physicians and House Surgeons. Salary £120 and £100 per annum respectively, with board, residence, and washing.

WIGAN, ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary £150 per annum, with board, apartments, and washing.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Edenbridge, in the county of Kent; at Letterkenny, in the county of Donegal; at Milford Haven, in the county of Pembroke; at Ballyfeard, in the county of Cork; at Bankfoot, in the county of Perthshire; and at Tring, in the county of Hertfordshire.

Births, Marriages, and Deaths.

BIRTHS.

BOSTOCK.—On August 23rd, at Airlie, Silverdale-road, Eastbourne, the wife of Lieutenant-Colonel J. S. Bostock, R.A.M.C., of a daughter.

BOWEN.—On August 25th, at Lensfield-road, Cambridge, the wife of W. H. Bowen, M.S., F.R.C.S., of a son.

CHARTERIS.—On August 20th, at St. James-terrace, Glasgow, the wife of F. J. Charteris, M.D., of a daughter.

CUMBERLEGE.—On August 29th, at Ninian-road, Roath Park, Cardiff, to Dr. and Mrs. Gilbert Cumberlege, a daughter.

DENYER.—On August 19th, at Albion-street, Hull, East Yorks, the wife of Stanley E. Denyer, C.M.G., M.D., M.A. Cantab., F.R.C.S. Eng., of a son.

GARDINER.—On August 26th, at Dunmow, the wife of J. Napier Gardiner, M.D., of a son.

GUTHRIE.—On August 22nd, at Greta, Heswall, Cheshire, the wife of Thomas Guthrie, M.B., F.R.C.S., of Rodney-street, Liverpool, of a son.

PEARSON.—On August 20th, at Leicester, the wife of Dudley Garencières Pearson, M.B., B.C. Camb., of a daughter.

RYLE.—On August 30th, at Madeira-place, Brighton, to Captain John Ryle, M.B., R.A.M.C., and Miriam Ryle, a son.

TUDGE.—On August 17th, at Chipstead, Surrey, the wife of C. C. Tudge, M.B., B.S., of a daughter.

MARRIAGES.

BENNETT—LYELL.—On August 26th, at St. Mary's Episcopal Church, Montrose, Claude John Eddowes Bennett, M.R.C.S., Melksham, Wilts, and Lieutenant, R.A.M.C., to Jean Maria, second daughter of Alexander Lyell, of Gardyne, Forfarshire.

COLYER—KING.—On August 19th, at Holy Trinity Church, Claygate, Surrey, Lieutenant Claude G. Colyer, R.A.M.C., to Gladys May, daughter of the late Mr. Robert King, J.P., of South Africa.

HAMILTON—STEELE.—On August 19th, at St. Mary's-on-the-Hill, Chester, Archibald Douglas Hamilton, M.D. Lond., Lieutenant, R.A.M.C., to Beatrice Ellen, daughter of Mr. and Mrs. W. J. Steele, of Matlock.

LAPAGE—NICOLLE.—On August 17th, at St. Mary's Church, Walmer, Francis Claud Lapage, Captain, R.A.M.C., to Gertrude, daughter of the late Mr. William Nicolle, of Guernsey, and Mrs. Nicolle.

MACKAY—SAVAGE.—On August 25th, at St. Mary's, Ambleside, Ernest Charles Mackay, M.D., of St. Leonards-on-Sea, to Nina, youngest daughter of the late Canon Savage and of Mrs. Savage, Iveing Cottage, Ambleside.

NELIGAN—SPENCER.—On August 18th, at Clifford Church, Herefordshire, Anthony Richard Neligan, M.D., Physician to the British Legation, Teheran, Persia, to Kate Mary Leigh, eldest daughter of the Rev. and Mrs. G. L. Spencer, of The Priory, Clifford.

WILLIAMSON—BURNETT.—On August 18th, at St. John's, Watford, Herts, Alfred John Williamson, M.A., M.D., D P.H. Camb., Captain, R.A.M.C., to Cecil Isobel, only daughter of Dr. and Mrs. J. D. Burnett, Faithlie House, Watford.

WRIGHT—RUTHERFORD.—On August 25th, at the Presbyterian Church of England, Blundellsands, Stanley Ninian Wright, M.B., M.Sc., D.P.H. (Surgeon, R.N.), to Kathleen, second daughter of Richard Rutherford, J.P., Ravella, Blundellsands, Lancashire.

DEATHS.

CORDEUX.—On August 18th, at Bunney Park, Notts, Robert Henry Cordeux, M.B., B.C.

DOUGLAS.—On August 26th, at the Medical Superintendent's House, the Royal Albert Institution, Lancaster, Archibald Robertson Douglas, L.R.C.P., L.R.C.S., &c., aged 47 years.

EVANSON-JONES.—Killed in action at the Dardanelles, between August 7th and August 11th, Second-Lieutenant T. A. E. Evanson-Jones, 11th Battalion Manchester Regiment, only and dearly loved son of Dr. and Mrs. Evanson-Jones, of Wellington Villa, Ashton Old Road, Manchester.

FARNDON.—On August 26th, at West Norwood, Levi Farndon, M.D., L.R.C.P. Dub., L.S.A. Lond., aged 69 years.

JOHNSTONE.—On August 26th, in London, Ralph W. Johnstone, M.D., aged 49 years.

ROSS-TODD.—On August 18th, at Greystoke, Purley, Paul Ross-Todd, L.R.C.S. Irel., formerly of Ballyshannon, co. Donegal.

SAUNDERS.—On August 29th, at Hythe, Frederick William Saunders, M.B., B.C. Cantab., late of Donnington Hurst, Newbury, and Assouan, Egypt, youngest son of the late Deputy Inspector-General George Saunders, C.B., aged 52 years.

WISE.—On August 25th, at Woodside, Poynton, Thomas Wise, L.R.C.P., M.R.C.S., aged 83 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, J. B., ET FILS, Paris.
Traité des Fractures. Par J. Tanton, Médecin-major de l'Armée, Professeur agrégé du Val-de Grâce. Price 20fr.
La Vaccination Antityphoïdique, Vaccination Préventive et Vaccinothérapie. Par le Dr. H. Méry, Professeur agrégé à la Faculté de Médecine de Paris, Médecin des Hôpitaux. Price 1fr. 50.

BALE, SONS, AND DANIELSSON, London.
A Compendium of Aids to Home Nursing. By N. Corbet Fletcher, M.B., M.R.C.S. Price 6d. net.

CHURCHILL, J. AND A., London.
A Manual of Midwifery. By Thomas Watts Eden, M.D., C.M. Edin., F.R.C.P. Lond., F.R.C.S. Edin., Obstetric Physician and Lecturer at Charing Cross Hospital. Fourth edition. Price 16s. net.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.
Infant Health: a Manual for District Visitors, Nurses, and Mothers. By J. (Shawnet) Cameron Macmillan, C.M.B., A.R.San.I. Price 2s. net.

HEINEMANN, WILLIAM, London.
Of Human Bondage: a Novel. By W. S. Maugham. Price 6s.

LAURIE, T. WERNER, London.
Sylvia's Marriage. By Upton Sinclair.

LIPPINCOTT, J. B., COMPANY, Philadelphia and London.
Applied Immunology: The Practical Application of Sera and Bacterins Prophylactically, Diagnostically, and Therapeutically. With an Appendix on Serum Treatment of Hæmorrhage, Organotherapy, and Chemo-therapy. By B. A. Thomas, A.M., M.D., and R. H. Ivy, M.D., D D.S. Price 16s. net.
A Handbook of Medical Diagnosis for the Use of Practitioners and Students. By J. C. Wilson, A.M., M.D. Price 25s. net.
Treatment of Internal Diseases. By Professor Norbert Ortner (Vienna). Edited (with additions) by Nathaniel Bowditch Potter, M.D. Translated by Frederick H. Bartlett, M.D. Third edition in English, revised, and reset from the fifth German edition. Price 21s. net.

THOMASONS, LIMITED, High-street, Hounslow.
The Meaning of Life. By E. Kay Robinson. Price 2s. 6d. net.

TIPOGRAFIA NAZIONALE DI GIOV. BERTERO, E.C., Rome.
Trattato Elementare di Patologia Esotica. By Umberto Gabbi.

UNIVERSITY PRESS, Cambridge.
Post-mortem Methods. By J. Martin Beattie, M.A., M.D., Professor of Bacteriology, University of Liverpool. Price 10s. 6d. net.
Character and Intelligence: a Thesis approved for the Degree of Doctor of Science in the University of London. By Edward Webb, British Journal of Psychology Monograph Supplement. Price 5s. net.

UNIVERSITY OF LONDON PRESS, London.
Germany's Food: Can it Last? The German Case as Presented by German Experts. English version edited by S. Russell Wells, M.D., B.Sc With a Critical Introduction by A. D. Waller, M.D., LL.D., F.R.S. Price 2s. net.

WRIGHT, JOHN, AND SONS, Bristol.
An Index of Treatment by Various Writers. Edited by Robert Hutchison, M.D., F R.C.P., and James Sherren, F.R.C.S. Seventh edition, revised and enlarged. Price 21s. net.

Notes, Short Comments, and Answers to Correspondents.

AN EARLY CLAIM FOR THE SANITARY SERVICE.

AT the outbreak of the Civil War in the United States of America in 1861, the pressure upon the Medical Bureau of the army of the North became very great, and three associations of New York—viz., the Woman's Central Association of Relief for the Sick and Wounded of the Army, the Advisory Committee of the Boards of Physicians and Surgeons of the Hospitals of New York, and the New York Medical Association for furnishing Hospital Supplies in Aid of the Army—petitioned the Department of War to institute "A Commission of Inquiry and Advice in respect of the Sanitary Interests of the United States Forces," to act in coöperation with the Medical Bureau, and without remuneration from the Government. The Commission had a wide field of inquiry and activity concerning everything that could affect the welfare, comfort, and efficiency of the troops. The leading spirit was Dr. William H. Van Buren. The Commission stated that "it must be well known to the Department of War, that several such commissions *followed* the Crimean and Indian Wars. The civilisation and humanity of the age and of the American people demand that such a Commission should *precede* our second War of Independence—more sacred than the first. We wish to prevent the evils that England and France could only investigate and deplore. The war ought to be waged in a spirit of the highest intelligence, humanity, and tenderness for the health, comfort, and safety of our brave troops." One way of enlisting the practical sympathy of the public was enlightening them as to the results of the sanitary work in the shape of facts, and the following figures were quoted as a part of the facts:—

> The statistics of the British forces during the war against Russia show the following rates of mortality: On the arrival of the army in Turkey (April, 1854) to the embarkation for the Crimea (September, 1854), the annual death-rate was 129 per 1000 men. In July, August, and September, it was increased to 293 per 1000 men; for the next three months to 511 per 1000 men; and it culminated in January, 1855, when it reached the fearful amount of 1174 per 1000 men (of which 97 per cent. was from disease). In other words, at this rate it would be necessary, in order to supply the loss occasioned by death alone, to replace the dead army by a new army of equal strength in about ten (10¼) months. *Then it was* that the British Government established sanitary operations, and so soon as their influence began to be felt (in April, May, and June, 1855), the rate of mortality fell to 250 per 1000 men, and from that time gradually and rapidly diminished, until the annual death-rate for January, 1856 (one year from its culmination) was 25 per 1000 men. The mortality of the United States forces during the present war (exclusive of three-months men) is being tabulated by the Sanitary Commission from the records in the Adjutant-General's office. These tables show that from the commencement of the war to the latest time when they could be made the annual death-rate of our forces has been 65 per 1000 men. From June 1st, 1861, to March, 1862, a period when our army lay comparatively inactive, we find the annual death-rate was 44½ per 1000 men. When the effects of climate were to the full as deadly, if not more so, than those of the Crimea, when every breath drew in swamp poison, and our men advanced by forced marches through Virginia mire and camped along the banks of malarious watercourses, the annual death-rate was 165 per 1000 men. To what was this owing? Not to the fact that our troops bring a greater amount of health into the service than those of other armies, for their mortality during the period of inaction was much greater than that of the British army during a like period. (This is owing largely to the careless inspection of recruits, a subject to which the Sanitary Commission has never ceased to call the attention of the Government.) It was owing in part, undoubtedly, to lessons learnt from the Russian War, and to the American spirit of improvement, which has made our armies, let who will say to the contrary, a splendid spectacle of progress in many points of efficiency. But was it not in a chief degree owing to the Sanitary Commission? Has not the Sanitary Commission a right to point to that result, and say, "*It is mine*"?

The Sanitary Commission issued an interim report from Boston in 1863, detailing briefly the origin of the Commission, abstracts from reports of its work, a few narratives of bravery and pathetic incidents, and an appeal to the public for further support. The book was actually also sold in London from an "English Branch" in aid of the fund in America.

IS THE SOLDIER SMOKING TOO MUCH?

THE cigarette habit seems to be playing a great part in the business of war, and the question has been raised whether the lavishness of the public has not led to an abuse of tobacco. A week ago a private died suddenly, and from the evidence it appeared that he had smoked 100 cigarettes in two days. The inquest was held at Southwark, and the coroner, Dr. F. J. Waldo, said he very much questioned whether so much smoking was good for men who had to indulge in physical exercises. Dr. Waldo's view is, of course, right, since the case was one of clear abuse, though the smoking appeared by medical evidence to have no relation to the cause of death. Every form of tobacco-smoking is known to exercise toxic effects, their intensity depending upon the amount consumed. The cigarette, in moderation, is a valuable solace in a time of anxiety, and the significance of the demand from the men in the trenches for cigarettes cannot lightly be ignored. Smoking undoubtedly affords relief and diversion in all nerve-straining tasks. The dangers of immoderate indulgence soon declare themselves, and the man who is busy in the trenches would automatically be protected from this temptation by the severe calls upon his activities. Cigarette smoking is not likely to be a serious menace to the soldier's efficiency, though in no case, can excess be defended, and a soldier on active service knows that well.

PUBLIC HEALTH IN THE BAHAMAS.

ACCORDING to the annual report prepared by the Acting Governor, Mr. W Hart Bennett, C.M.G. (Colonial Secretary), the estimated population of the Bahamas on Jan. 1st, 1915, was 55,639. The births in 1914 numbered 1939, as against 1907 in the previous year, and the deaths 1367, as against 1433. The birth-rate was 34·8 per 1000 and the death-rate 24·5. There was during the year no serious or general epidemic of disease. Diarrhœa and dysentery were far less prevalent than usual, but there were a few cases of whooping-cough and measles. There were 21 cases of typhoid fever (of which 2 died), as compared with 30 cases (of which 8 died) in 1913. Tuberculosis is rife among the coloured population. A simple leaflet of advice with regard to the disease has been printed and widely distributed. The chief medical officer also prepared a list of concentrated mixtures, tablets, &c., together with a small pamphlet of instructions for the use of those medicines in simple ailments occurring in the out-islands, where no medical man is resident. The commonest source of water-supply is wells, and it appears from an analysis of samples which has been made at the Imperial Institute that the water is hard, contains large proportions of chlorine, and is in most instances polluted. The other source of supply is rain water stored in tanks, tubs, and underground cisterns. A scheme for supplying the city and suburbs of Nassau with fresh water by boring and by storing in a reservoir has been laid before the House of Assembly, but financial considerations at present prevent any further action. The chief medical officer has discovered in brackish lakes in New Providence certain mosquito-larvæ-destroying fish very similar to, if not identical with, the so-called "millions" of Barbados. The building originally established in 1809 as a Poor-house has been enlarged, and now comprises the Alexandra Hospital, the Victoria Jubilee Infirmary, a lunatic asylum, and a leper asylum. The number of inmates on Jan. 1st, 1914, was 90—viz., 33 in the hospital, 22 in the infirmary, 32 in the lunatic asylum, and 3 in the leper asylum. During the year there were 719 admissions, making a total under treatment of 809, of whom 292 were discharged recovered, 179 relieved, 38 unchanged, and 115 died; at the close of the year 101 remained—39 in the hospital, 29 in the infirmary, 29 lunatics, and 4 lepers. No fewer than 14,950 prescriptions were made up at the dispensary. The sanitary condition of the hospital has been improved by laying a sewer pipe for surface drainage to the sea, and other improvements are to be carried out when funds permit. The rainfall for the year was 54·32 inches (as against 39·96 in 1913) and the mean temperature was 77·4° F. (as compared with 78·1° in 1913).

National.—We sympathise with much of our correspondent's letter, but the circumstances on board ship and with the Expeditionary Force on land are so different that no comparison between the procedure adopted can be drawn. The feeling in educational circles against the relaxation of standards is very strong, and no purpose would be served by a discussion on the suggested lines. It is certain that the General Medical Council, our supreme authority

under the Privy Council, would not agree with the proposal, which would require the abolition of the Medical Acts.

55 Years of Age.—There can be no doubt of the need for more medical officers in the army, both now and in the future, but the need is not in the higher military ranks mentioned by our correspondent. It is confidently expected that the interests of those who join the army will be safeguarded by their professional brethren. Undoubtedly the call upon the patriotism of the medical practitioner is very considerable.

T. S. D.—We agree with our correspondent's general view. We do not think that there could be the "hundreds" of unemployed competent men to whom he alludes because of the difficulty of obtaining assistants in institutions, although these posts are regularly advertised.

Pater.—The suggestion is perfectly sound, but the analogy is not, because it takes five years at the very shortest to turn a student into a medical man. We sympathise with the position outlined by our correspondent.

F. J. J.—The treatment either under the name, or considered as a form of massage, is recommended in text-books and is certainly often valuable.

An Officially Made Slacker.—We cannot understand the circumstances in which our correspondent's services have not been employed.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M., Clinical Lecture.

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

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Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1915, which was completed with the issue of June 26th, were given in THE LANCET of July 3rd.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1915 are now ready. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

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METEOROLOGICAL READINGS.

(Taken daily at 9.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 1st, 1915.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Aug. 26	30·166	N.	...	106	75	58	58	61	Fine
,, 27	30·076	N.E.	...	107	73	57	57	61	Fine
,, 28	29·910	N.E.	...	109	72	59	58	61	Fine
,, 29	29·760	W.	0·13	79	63	57	56	59	Cloudy
,, 30	30·020	N.W.	...	115	65	48	50	53	Fine
,, 31	30·128	N.W.	0·01	111	65	53	53	57	Overcast
Sept. 1	29·840	S.W.	...	120	67	55	56	59	Cloudy

The following magazines, journals, &c., have been received:—British Journal of Dermatology, Quarterly Journal of Microscopical Science, American Medicine, American Journal of Obstetrics, Indian Medical Journal, Electrical Review, Ophthalmology, Archives of Internal Medicine, Tropical Diseases Bulletin, Archives of Pediatrics, Albany Medical Annals, National Medical Journal, Paris Médical, Canadian Practitioner, Philippine Journal of Science, British Review, Cornhill Magazine, Harper's Monthly, Canadian Medical Association Journal, Dominion Medical Monthly, Journal of the Royal Sanitary Institute.

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